17" MONITOR
SERVICE MANUAL

GP0443AA0

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CONTENTS

SAFETY PRECAUTIONS

SAFETY PRECAUTIONS

DISCONNECTION FROM THE MAINS SUPPLY

The on/off switch on this product, when in the off state, returns the monitor to a very low power standby condition; it is not a "mains disconnect device".

Prior to any internal servicing always isolate the mains from this product by removing the IEC connector from the host computer/mains supply as appropriate, then discharging the equipment by pressing the on/off button two or three times.

In particular, care should be taken not to touch TR1's heatsink unless the mains is isolated from the monitor as described above.

SAFETY AND ISOLATION

UNDER NO CIRCUMSTANCES SHOULD ANY FORM OF REPAIR OR MAINTENANCE BE ATTEMPTED BY ANY PERSON OTHER THAN A QUALIFIED ENGINEER.

Most of the circuits on the chassis assembly are isolated from the mains by the transformer T1, relay RL1, components C3, C4, OPT01, C7, air gaps and double insulation, all on the Switched Mode Power Supply. To maintain this safety factor ensure that, after repair, air gaps and leakage paths are not reduced by protruding wires etc., which may exist after component replacement.

SWITCHED MODE POWER SUPPLY (SMPS)

Although the outputs from the power supply are isolated from the incoming mains supply, the bridge rectifier and the control and regulation circuit ARE NOT ISOLATED. Therefore, when servicing the power supply section of the chassis assembly, the SMPSU should be supplied by a MAINS ISOLATION TRANSFORMER OF AT LEAST 300VA RATING.

HANDLING PRECAUTIONS

HT ELECTRICAL CHARGES

The power supply section remains charged with respect to chassis for 30-60 seconds after switching off. Care should be taken when handling the chassis to avoid touching this area during this time.

EHT CHARGES - HORIZONTAL (LINE) OUTPUT STAGE/CRT

Before handling or attempting adjustment or replacement on the horizontal (line) output stage or on CRT areas, always discharge the final anode of the CRT by using a suitable EHT probe only. Do this by connecting **first** to CRT dag earth coating/earth braid assembly, and then to CRT final anode/anode button 'poppy' connector.

NOTE

Very considerable electrical charges can be stored in these areas - even for lengthy periods of time after switch-off. In the interests of your personal safety observe the precautions listed.

WARNING

The mains supply should be disconnected from the unit before attempting to change the fuse F1 or F51.

HANDLING CRTs

WARNING

Operation of the tube under abnormal conditions may produce soft X-rays which may constitute a health hazard on prolonged exposure at close range. Precautions must be used during the servicing of the equipment to ensure that the anode voltage and other tube voltages are adjusted to the recommended values.

Tubes should be kept in the shipping box or similar protective container until just prior to installation. Wear heavy protective clothing, including gloves and safety glasses. Handle the tube with extreme care. Particular caution should be taken with the tube neck, do not hold the tube using the neck. Do not subject the tube to more than moderate pressure and do not apply pressure to the tube neck.

SAFETY CRITICAL COMPONENTS

Components marked ⚠ on the parts list and circuit diagram are safety approved types and they should be replaced only with components supplied or approved by our Service Department. It is also recommended that the components not marked with the safety symbol should be replaced by parts of the type originally fitted, and this applies particularly to those resistors which are stood off the printed circuit boards.

HANDLING PRECAUTIONS - STATIC ELECTRICAL CHARGES

Depending on equipment type and model, the equipment may contain devices which may be damaged by static electrical charges during handling. Generally, these devices are indicated by a ⚠ symbol.

When replacing or handling these devices or PCBs containing such devices, care should be taken. Soldering irons should be earthed and personnel should use wrist straps earthed via a 1Mohm resistor. If the latter is not practicable they should discharge themselves of any static electricity by touching an earthed point.

Static sensitive devices should be packed in suitable conductive containers.

NOTE

Electrostatic discharge does not necessarily destroy such a component but may damage it.

Static damaged devices may pass normal test both on site and in Service Workshops, and PCBs containing such damaged devices are a major cause of no-fault-found problems.

SAFETY CHECKS

After any servicing work on the monitors, the following safety checks should be carried out.

Ensure that all earth connectors are replaced securely, particularly safety earths, P-band and dag earth CRT connections.

EARTH CONTINUITY CHECK

a) Using a suitable multimeter check between Dag earth on the CRT and mains plug earth pin (safety earth connection). The reading should be less than 1Kohm (with tube discharged).

b) Check mains earth continuity between mains plug earth pin and:

   1) CRT 'P' Band
   2) PCB Earth pin on main chassis

c) The final assembly/housing should be checked for continuity between the mains plug earth pin and ALL exposed metalwork.

NOTE

Tests b) and c) should have a resistance of less than 0.1 ohm.

HIGH VOLTAGE ISOLATION/INSULATION CHECKS

On the mains supply 3 pin plug - check between line and neutral to earth for leakage and breakdown.

This test should be made with 1.8 kV AC or DC equivalent.

ON TEST

1) No breakdown should occur
2) Earth leakage should be less than 15mA at 1.5kV

CAUTION

A MONITOR FAILING ANY OF THE ABOVE CHECKS MUST BE RESTORED TO SAFE WORKING CONDITION BEFORE BEING RETURNED TO THE USER.

SAFETY PRECAUTIONS

OPERATING SAFETY

Before connecting this apparatus to the Mains Power Supply read the following important notes:

EHT SETTING

VR100 (set EHT) must be totally encapsulated to prevent maladjustment, see note on page 13-3.

FUSE RATING

110-240V 50-60Hz 5 x 20mm - T3.15A (slow blow)

ELECTRICAL SUPPLY UK AND EUROPE

WARNING: This apparatus must be earthed

The wires in the mains lead are coloured in accordance with the following code:

GREEN and YELLOW : EARTH
BLUE : NEUTRAL
BROWN : LIVE

As the colours of the wires in the mains lead may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

a) EARTH

The wire coloured GREEN and YELLOW must be connected to the terminal marked E or by the safety earth symbol ⏚ or coloured GREEN, or GREEN and YELLOW.

b) NEUTRAL

The wire coloured BLUE must be connected to the terminal marked N or coloured BLACK.

c) LIVE

The wire coloured BROWN must be connected to the terminal marked L, or coloured RED.

WARNING:

If a moulded-on plug is fitted to this apparatus and socket outlets are not suitable for this plug, the plug must be cut off, and an appropriate three pin plug fitted.

The plug cut from the mains lead must be destroyed, as a plug with a bared flexible cord is hazardous if engaged in a live socket.

If a 13A plug is used a 3A ASTA approved fuse to BS1362 must be fitted. For any other plug or connector, protect with a 3A fuse on a distribution board.

CAUTION:

When changing a mains fuse the fuse cover must be re-fitted. If the fuse cover is lost or broken do not use the plug until a replacement is obtained. Replacement fuse covers can be obtained from the supplier.

When ordering please state colour of insert in the plug base, or colour embossed in words on the plug base.

POWER SUPPLY CORD SET

This apparatus operates with any mains input voltage in the range 90-265V.

The power supply cord set supplied with this apparatus (optional - supplied on certain models only) is appropriate for use in the country in which you purchased this apparatus.

Information on the correct selection of a power supply cord set is given below.

Selection of Correct Cord Set

The lead must have a maximum length of 2 metres. Consult your supplier for further assistance.

United Kingdom

The minimum specifications for the cord set are as follows:

Wall connector :	13A plug to BS:1363, fitted with a 3A fuse to be marked with the mark of the approval agency. Acceptable agencies include: BSI ASTA BEAB
Apparatus connector :	BS:4491 connector, 6A, 250V
Cord :	3 core, minimum conductor size of 0.75mm^2. Cable to comply with BS:6500 Table 16 and be BASEC (or equivalent) approved.
Current capacity :	6A minimum

Europe (excluding United Kingdom)

The fittings on the cord set must bear the certification of the agency responsible for evaluation in a specific country. Acceptable agencies include:

BSI (UK)
CEBEC (Belgium)
DEMKO (Denmark)
FEI (Finland)
IMQ (Italy)
KEMA (Netherlands)
NEMKO (Norway)
OVE (Austria)
SEMKO (Sweden)
SEV (Switzerland)
UTE (France)
VDE (Germany)

The minimum specifications for the cord set are:

Wall connector : CEE (7)VII 16A, 250V type (with earth grounding connector)

Apparatus connector : CEE22 (IEC320) connector

Cord : 3 core, minimum conductor size of $0.75mm^2$. Cable to comply with a Harmonised standard and be HAR marked.

Current capacity : 6A minimum

USA & Canada

The cord set must be UL listed and CSA certified. The minimum specifications for the cord set are:

Wall connector : NEMA 5-15P, 15A, 125V type (with earth grounding connector)

Apparatus connector : CEE22 (IEC320) connector

Cord : SV, 18AWG, 3 conductor

Current capacity : 6A minimum

Australia

In Australia, the plug must comply with the requirements of AS3112-1990.

New Zealand

In New Zealand, the plug must comply with the requirements of NZ SS 198-1967.

SICHERHEITSMASSNAHMEN

SICHERHEITSMASSNAHMEN

TRENNUNG VOM STROMNETZ

Mit dem Ein-/Ausschalter dieses Produkts kann der Monitor in einen Niederleistungsbereitschaftszustand gebracht werden; dabei handelt es sich jedoch nicht um eine "Einrichtung zur Unterbrechung der Stromversorgung".

Bevor irgendwelche interne Wartungsarbeiten ausgeführt werden, muß die Stromversorgung zu diesem Produkt immer unterbrochen werden. Dies geschieht durch Entfernen des IEC-Steckers aus dem Hostcomputer bzw. Stromnetz und anschließendes Entladen der Ausrüstung durch zwei- oder dreimaliges Drücken des Ein-/Ausschalters.

Dabei sollte besonders darauf geachtet werden, daß der TR1-Wärmeleiter nicht berührt wird, es sei denn, daß die Stromversorgung zum Monitor wie oben beschrieben unterbrocken wurde.

SICHERHEIT UND ISOLIERUNG

ES SOLLTEN UNTER KEINEN UMSTÄNDEN VON EINER ANDEREN PERSON ALS EINEM QUALIFIZIERTEN INGENIEUR IRGENDWELCHE REPARATUR- ODER WARTUNGSARBEITEN AUSGEFÜHRT WERDEN.

Die meisten Chassiseinheitsstromkreise sind durch Transformator T1, Relay RL1, Bauelemente C3, C4, OPT01, C7, Luftspalten und Doppelisolierung, welche sich alle auf der Schaltmodus-Stromversorgung befinden, vom Stromnetz getrennt. Um diesen Sicherheitsfaktor beibehalten zu können, sich vergewissern, daß nach Reparaturarbeiten Luftspalten und Kriechstrecken durch hervorstehende Drähte, usw, die nach dem Auswechsein von Bauteilen existieren könnten, nicht reduziert werden.

SCHALTMODUSSTROMVERSORGUNG

Obwohl die Ausgangsleistungen der Stromversorgung vom ankommenden Stromnetz getrennt sind, sind Brückengleichrichter, Steuer- und Regelstromkreis NICHT ISOLIERT. Deshalb sollte bei der Wartung des Stromversorgungsteils der Chassiseinheit die SMPSU-Versorgung durch einen NETZISOLIERTRANSFORMATOR MIT MINDESTENS 300VA NENNLEISTUNG erfolgen.

HANDHABUNGSVORSCHRIFTEN

HOCHSPANNUNGSLADUNGEN

Der Stromversorgungsteil bleibt, was das Chassis betrifft, 30-60 Sekunden nach der Ausschaltung geladen. Deshalb sollte man bei Arbeiten am Chassis vorsichtig sein, daß während dieser Zeit dieser Bereich nicht berührt wird.

HÖCHSTSPANNUNGSLADUNGEN - HORIZONTALES (LEITUNGS-) AUSGABESTADIUM/KATHODENSTRAHLRÖHRE

Bevor im horizontalen (Leitungs-) Ausgabestadium oder in Kathodenstrahlröhrenbereichen Einstellungen ausgeführt oder Ersatzteile eingebaut werden können, muß die Endanode der Kathodenstrahlröhre entladen werden. Dies darf immer nur mit einer geeigneten Höchstspannungssonde ausgeführt werden. Dazu muß zuerst an Aquadagerdungsüberzug/Erdungsgeflecht der Kathodenstrahlröhre und dann an Kathodenstrahlröhrenendanode / Anodenknopfschnappstecker angeschlossen werden.

HINWEIS

In diesem Bereich können sehr hohe elektrische Ladungen gespeichert werden - auch für lange Zeit nach der Ausschaltung. Im interesse Ihrer eigenen Sicherheit sollten die aufgeführten Vorsichtsmaßnahmen genauestens beachtet werden.

ACHTUNG

Die Stromversorgung zur Einheit sollte unterbrochen werden, bevor die Sicherung F1 oder F51 ausgewechselt wird.

UMGANG MIT KATHODENSTRAHLRÖHREN

ACHTUNG

Betrieb der Röhre unter anormalen Bedingungen kann weiche Röntgenstrahlen erzeugen, die bei längerer Aussetzung in naher Umgebung ein Gesundheitsrisiko darstellen können. Währen der Wartung der Ausrüstung müssen bestimmte Vorsichtsmaßnahmen getroffen werden, um sicherstellen zu können, daß die Anodenspannung und andere Röhrenspannungen auf die empfohlenen Werte eingestellt sind.

Röhren sollten bis kurz vor ihrem Einbau in Versandbehältern oder ähnlichen Schutzbehältern aufbewahrt werden. Schutzkleidung für hohe Ansprüche, einschließlich Handschuhe und Schutzbrillen, tragen. Die Röhre mit äußerster Vorsicht behandeln. Dabei sollte mit dem Röhrenhals besonders vorsichtig umgegangen werden und die Röhre nicht am Hals gehalten werden. Die Röhre nur mäßigem Druck aussetzen, dabei jeglichen Druck auf den Röhrenhals vermeiden.

SICHERHEITSGEFÄHRDENDE BAUTEILE

Bauteile, die auf der Teilliste und dem Schaltbild mit einem ⚠ versehen sind, sind sicherheitsgeprüfte Teile und sollten nur mit Bauteilen, die von unserer Kundendienstabteilung geliefert und genehmigt wurden, ersetzt werden. Außerdem empfiehlt sich, daß Bauteile, die nicht mit dem Sicherheitssymbol versehen sind, mit solchen Teilen, die der ursprünglich eingebauten Art entsprechen, ersetzt werden. Dies trifft besonders auf solche Widerstände zu, die von der Schaltplatten herausragen.

HANDHABUNGSVORSCHRIFTEN - STATISCHE ELEKTRISCHE LADUNGEN

Abhängig von Typ und Modell der Ausrüstung, kann die Ausrüstung Einrichtungen umfassen, die während der Hantierung von statisch elektrischen Ladungen beschädigt werden könnon, Im allgemeinen werden solche Einrichtungen mit einem ⚠ versehen.

Beim Auswechsein oder Umgang mit solchen Einrichtungen oder Schaltplatten, die solche Einrichtungen beinhalten, ist deshalb besondere Vorsicht geboten. Lötkolben sollten geerdet und das Personal mit Armbändern, die über einen 1-Mohm-Widerstand geerdet sind, ausgerüstet sein. Falls ein Tragen von Armbändern nicht praktisch ist, sollte sich das Personal durch Berühren eines Erdungspunkts von etwaiger statischer Elektrizität entladen können.

Statik-empfindliche Einrichtungen sollten in geeignete leitfähige Behälter gepackt werden.

HINWEIS

Elektrostatische Entladung muß einen solchen Bauteil nicht zerstören, kann diesen jedoch möglichweise beschädigen.

Es ist durchaus möglich, daß statikbeschädigte Einrichtungen bei normalen Tests, die an Ort und Stelle und in Service-Werkstätten ausgeführt werden, nicht erkannt werden. Schaltplatten mit solchen beschädigten Einrichtungen sind später jedoch die Hauptursache für Probleme, bei denen keine Störung gefunden werden kann.

SICHERHEITSKONTROLLEN

Nach an den Monitoren ausgeführten Wartungsarbeiten sollten immer folgende Sicherheitskontrollen durchgeführt werden:

Sich vergewissern, daß alle Erdanschlüsse wieder fest angebracht worden sind, dies trifft besonders auf Sicherheitserdung, P-Band und Aquadagerdungskathodenstrahlröhren-Anschlüsse zu.

ERDUNGSKONTINUITÄTSKONTROLLE

a) Kontinuität zwischen Aquadagerdung an der Kathodenstrahlröhre und dem Netzsteckererdungsstift (Sicherheitserdanschluß) überprüfen. Dazu ein geeignetes Vielfachmeßgerät verwenden. Der abgelesene Wert sollte unter 1 Kohm liegen (bei entladener Röhre).

b) Überprüfung der Netzerdungskontinuität zwischen Netzsteckererdungsstift und:

    1) Kathodenstrahlröhren-P-Band
    2) Schaltplattenerdungsstift am Hauptchassis

c) Die Endeinheit / das Gehäuse sollte auf Kontinuität zwischen Netzsteckererdungsstift und ALLEN ausgesetzten Metallteilen überprüft werden.

HINWEIS

Bei Tests b) und c) sollte ein Widerstand von weniger als 0,1 Ohm gemessen werden.

HOCHSPANNUNGSTRENN-/ISOLIERKONTROLLEN

Am Netzstromversorungs-3-Stift-Stecker - zwischen stromführendem Leiter und Nulleiter und Erdleitung auf Isolationsfehler und Störung überprüfen.

Dieser Test sollte mit einem Wechselstrom 1,8kV oder dem Gleichstromäquivalent ausgeführt werden.

BEIM TEST

1) Es darf keine Störung auftreten.
2) Erdschluß sollte weniger als 15mA bei 1,5kV betragen.

VORSICHT

EIN MONITOR, DER BEI EINEM DER OBEN GENANNTEN TESTS VERSAGT, MUSS WIEDER IN EINEN SICHEREN BETRIEBSZUSTAND GEBRACHT WERDEN, BEVOR ER AN DEN BENUTZER ZURÜCKGESCHICKT WERDEN KANN.

BETRIEBSSICHERHEIT

Bevor dieser Apparat an die Netzstromversorgung angeschlossen wird, sollten folgende wichtige Hinweise beachtet werden.

HÖCHSTSPANNUNGSEINSTELLUNG

VR100 (siehe Höchstspannung) muß völlig eingekapselt sein, um eine falsche Einstellung zu verhindern. Siehe Hinweise auf Seite 13-3.

SICHERUNGSNENNWERT

110-240V 50-60Hz 5 x 20mm - T3,15A (träge SIcherung)

STROMVERSORGUNG GB UND EUROPA

ACHTUNG: Dieser Apparat muß geerdet werden

Die Drähte in der Zuleitung sind mit folgendem Farbcode versehen:

GRÜN und GELB : ERDLEITUNG
BLAU : NULLEITER
BRAUN : STROMFÜHRENDER LEITER

Falls die Farben der Drähte in der Zuleitung nicht den Farbmarkierungen zur Identifizierung der Anschlußklemmen in Ihrem Stecker entsprechen, muß Folgendes ausgeführt werden:

a) ERDLEITUNG

Der GRÜNE und GELBE Draht muß mit der Anschlußklemme, die mit einem E oder dem Sicherheitserdungssymbol ⏚ markiert oder GRÜN oder GRÜN und GELB ist, verbunden werden.

b) NULLEITER

Der BLAUE Draht muß mit der Anschlußklemme, die mit einem N markiert oder SCHWARZ ist, verbunden werden.

c) STROMFÜHRENDER LEITER

Der BRAUNE Draht muß mit der Anschlußklemme, die mit einem L markiert oder ROT ist, verbunden werden.

ACHTUNG:

Wenn ein einteiliger Stecker am Apparat angebracht ist und die Steckdose für diesen Stecker nicht geeignet ist, muß der Stecker entfernt und ein entsprechender 3-Stift-Stecker angebracht werden.

Der von der Zuleitung entfernte Stecker muß weggeworfen werden, da ein Stecker mit offenliegender Anschlußschnur beim Einschieben in eine stromführende Steckdose lebensgefährlich ist.

Wenn ein 13-A-Stecker verwendet wird, muß eine von ASTA zugelassene 3-A-Sicherung nach BS1362 angebracht werden. Andere Stecker oder Anschlüsse müssen mit einer 3-A-Sicherung auf einer Verteilerschalttafel geschützt werden.

VORSICHT:

Beim Auswechseln einer Netzsicherung muß die Sicherungsabdeckung wieder angebracht werden. Wenn die Sicherungsabdeckung verloren geht oder beschädigt ist, den Stecker erst dann wieder verwenden, wenn ein Ersatzteil zur Verfügung steht und eingebaut werden kann. Ersatzsicherungsabdeckungen könnon vom Lieferanten erhalten werden.

Beim Bestellen bitte Farbe des Einsatzteils in der Steckerfläche oder die in Worten eingeprägte Farbe auf der Steckerfläche angeben.

NETZANSCHLUSSKABELSATZ

Dieser Apparat läßt sich mit allen Eingangsspannungen im Bereich zwischen 90 und 265V verwenden.

Das mit diesem Gerät gelieferte Netzkabel (nur bei bestimmten modellen wird das Netzkabel auf wunsch geliefert) ist zur verwendung in dem Land ausgelegt, in welchem sie das Gerät erworben haben.

Einzelheiten über die richtige Auswahl des Netzanschlußkabelsatzes folgen.

AUSWAHL DES RICHTIGEN KABELSATZES

Die Zuleitung muß eine maximale Länge von 2 Metern haben. Ihr Lieferant wird Ihnen für etwaige Fragen dazu zur Verfügung stehen.

Großbritannien

Die Mindestspezifikationen für den Kabelsatz sind wie folgt:

Wandanschluß: 13-A-Stecker nach BS:1363 mit einer 3-A-Sicherung, die eine Markierung der Zulassungsbehörde trägt. Anerkannte Zulassungsbehörden sind:

BSI
ASTA
BEAB

Apparatanschluß: BS:4491 Anschluß, 6A, 250V.

Kabel: Dreiadrig, Mindestleiterdicke: 0,75mm², Kabel gemäß BD:6500 Tabelle 16 und von BASEC (oder einem Äquivalent) zugelassen.

Stromkapazität: 6A Minimum.

Europa (GB nicht miteingeschlossen)

Die Anschlußstücke am Kabelsatz müssen mit einem Zertifikat der Behörde, die die Evaluierung in einem spezifischen Land vorgenommen hat, versehen sein. Anerkannte Behörden sind:

BSI (GB)
CEBEC (Belgien)
DEMKO (Dänemark)
FEI (Finnland)
IMQ (Italien)
KEMA (Niederlande)
NEMKO (Norwegen)
OVE (Österreich)
SEMKO (Schweden)
SEV (Schweiz)
UTE (Frankreich)
VDE (Deutschland)

Die Mindestspezifikationen für den Kabelsatz sind:

Wandanschluß: CEE (7) VII 16A, 250V Typ (mit Erdungsanschluß)

Apparatanschluß: CEE22 (IEC320) Anschluß

Kabel: Dreiadrig, Mindestleiterdicke: 0,75mm². Kabel muß einer Harmonisierten Norm entsprechen und HAR-markiert sein.

Stromkapazität: 6A Minimum

USA & Kanada

Der Kabelsatz muß UL-gelistet sein und ein CSA-Zertifikat tragen. Die Mindestspezifikationen für den Kabelsatz sind:

Wandanschluß:	NEMA 5-15P, 15A, 125V Typ (mit Erdungsanschluß)
Apparatanschluß:	CEE22 (IEC320) Anschluß
Kabel:	SV, 18AWG, Dreifachkabel
Stromkapazität:	6A Minimum

Australien

In Australien muß der Stecker Anforderungen gemäß AS3112-1990 entsprechen.

Neuseeland

In Neuseeland muß der Stecker Anforderungen gemäß NZ SS 198-1967 entsprechen.

SPECIFICATIONS

SPECIFICATIONS

INPUTS

Voltage:	90 - 265V
Frequency:	47 - 63Hz
RMS current consumption:	< 0.8A at 240V < 1.5A at 110V
Input power:	< 95 Watts at 80 cd/m² full screen < 30 Watts VESA 'SUSPEND' mode < 5 Watts VESA 'OFF' mode
Inrush current:	< 50A at power on

15 pin HC video input:

Pin	Signal
1	Video red
2	Video green
3	Video blue
4	ID bit 2
5	DDC return (0V)
6	Red ground
7	Green ground
8	Blue ground
9	No connection
10	Sync return (0V)
11	ID bit 0
12	Data IIC (SDA)
13	Horizontal sync
14	Vertical sync
15	Data clock IIC (SCL)

DISPLAY

CRT	17" 90 degree 29.1mm neck 0.28mm pitch
Deflection yoke:	Saddle/saddle
Horizontal scan:	30 - 64kHz 17VD4EVS2 15 - 64kHz other models
Vertical scan:	45 - 125Hz

ENVIRONMENTAL

Temperature:	5 to 40°C (operating) -20 to 60°C (non-operating)
Temperature change:	10°C per hour maximum

Humidity: 10% to 90% relative humidity, non-condensing

Humidity change: 10% per hour maximum

Altitude: -300 to 2000m (operating)

VIBRATION

5 to 18Hz: 0.3mm pk-pk (operating)
0.8mm pk-pk (non-operating)

18 to 350Hz: 0.2g pk (operating)
0.5g pk (non-operating)

DIMENSIONS

Height: 400mm (including tilt and swivel)
350mm (without tilt and swivel)

Width: 410mm

Depth: 440mm

Weight: 17.0kg (unpacked)
19.2kg (packed)

SERVICE ACCESS

NOTE: Please take note of the position of all cableforms etc, and the order of assembly of all screws and washers.

REMOVING THE REAR COVER

1. Remove the 2 screws at the rear which secure the cover and apply pressure to the two places on the top of the unit indicated by arrows in figure 1.
2. Slide the cover off backwards.

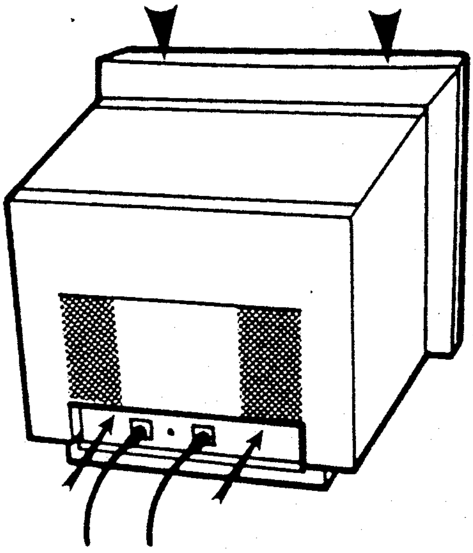


Figure 1

REAR BRACKET REMOVAL

1. Remove the 4 screws securing the rear bracket to the chassis.
2. Slide the two integral lead assemblies up and out from the rear bracket.

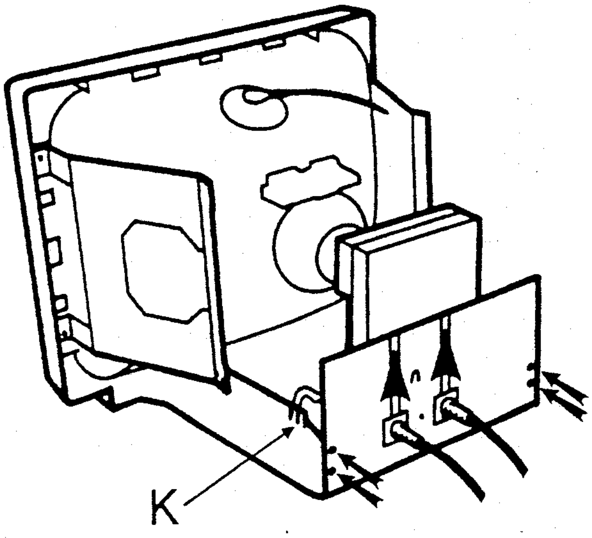


Figure 2

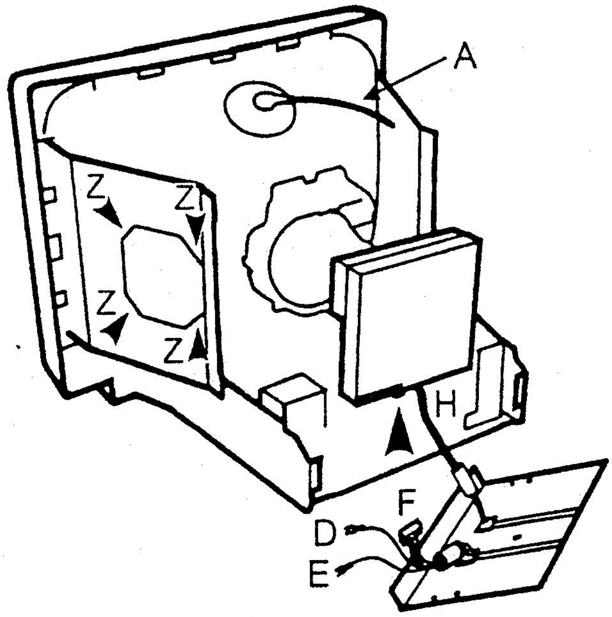


Figure 3

DISCONNECTING THE PCB

1. Disconnect the EHT lead, A, from the CRT, see figure 3.
2. Remove the tube base pcb from the CRT, see figure 3.
3. Disconnect the degauss coil, B, see figure 6.
4. Disconnect the mains switch lead, W, see figure 6.
5. Disconnect the CRT dag earth lead C, see figure 6.
6. Remove the earth connections from the tube base screen, D and E, see figure 3.
7. Disconnect the video cable, F, from the tube base panel, see figure 3.
8. Unclip cable H to the tube base panel, see figure 3.
9. Remove the scan coil plug J from the main PCB, see figure 6.
10. Disconnect the earth lead, K, from the chassis, see figure 2.
11. Disconnect the two leads, X and Y from the dynamic focus PCB, see figure 4.
12. Remove the 4 screws holding the dynamic focus module (if fitted), Z, see figure 3.
13. Holding the pcb by the sides, gently slide the drive/deflection pcb clear of the supports and lift out from the back.
14. Disconnect the controls lead, O, see figure 4.

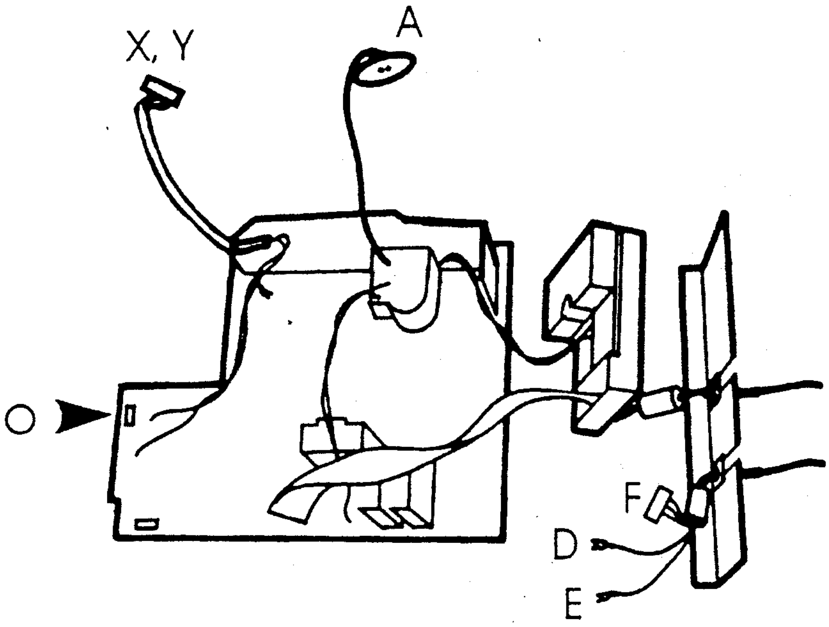


Figure 4

REMOVING THE METAL FRAME

Remove the 6 screws as shown in figure 5 below.

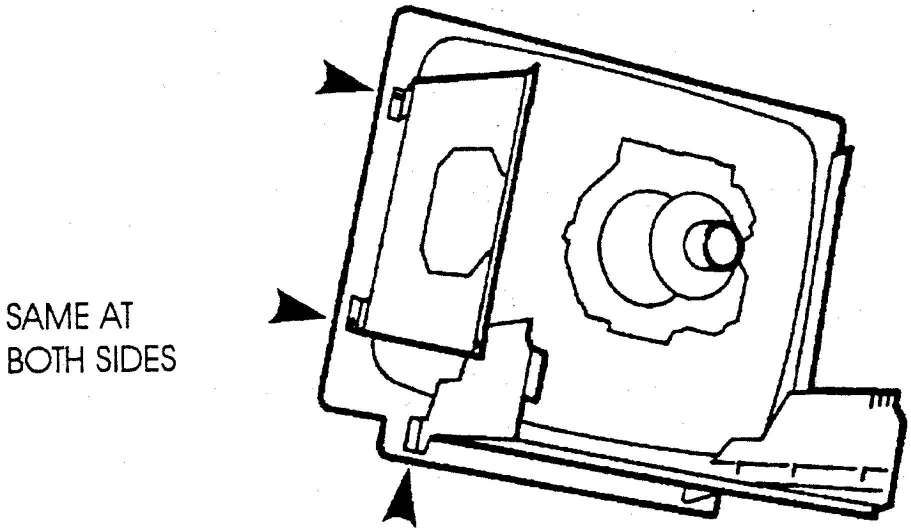

SAME AT
BOTH SIDES

Figure 5

REMOVING THE CRT

To remove the CRT from the facia loosen the four tube retaining screws, indicated by arrows in figure 6, using nut runners. The tube can now be lifted from the facia.

Be sure to retain the four rubber washers which are fitted between the CRT mounting lug and the facia.

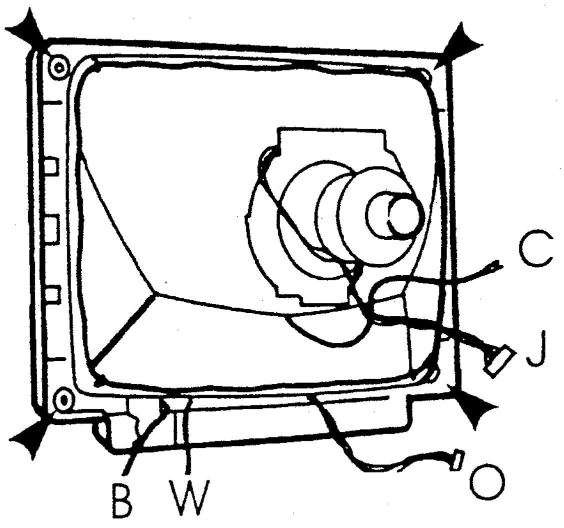


Figure 6

CONTROLS PCB

1. Undo the mains connector and controls connector, figure 7.
2. Remove the 4 screws, figure 7.
3. Lift out the panel.

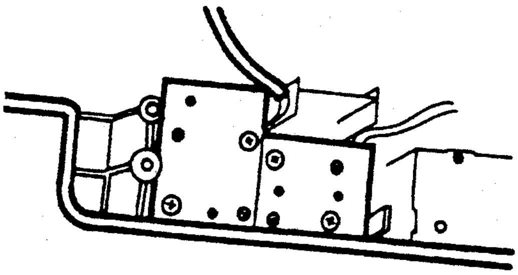


Figure 7

MECHANICAL DETAILS

MECHANICAL DETAILS

	DESCRIPTION	PART NUMBER
	Insulating ring	FC0033AA0
	Push button	HK0054CP0
⚠	Degauss coil	LD044KA1
	Rear input bracket	MC1966I02
	Push button spring	MO1618I01
	Tube base RFI screen base	MO3599I01
	Chassis base	MO3852I02
	Left hand CRT bracket	MO3856I01
	Right hand CRT bracket	MO3857I01
	Tube base RFI screen lid	MO3860I01
	Side bracket	MO3956I02
⚠	Facia	PA0190I01
	Tilt and swivel	PA0191I01
	Cover	PC1914I01
	Customer control housing	PC1916I01
	Standby button	PC1922I01
	Degauss button	PC1923I01
	PCB side support	PO1346I01
	PCB insulator	PO3975I01
	Rubber wedge	PO3976I01
⚠	CRT	VC0006QC2
⚠	Mains input lead assembly	WA0526A02
	RFI earth lead from tube base to base plate	WA0629A01
	Switch lead assembly	WA0653A02
	O/SD to drive/deflection lead	WA0654A02
	RFI earth lead assembly	WA0660A01
	Dag earth lead assembly	WA0667A01
	Video lead	WA0677A02

MICROCONTROLLER SYSTEM OVERVIEW

Please note: *This circuit description was written for models with BNC inputs. The models covered by this manual have no interface and, therefore, no BNC inputs.*

MICROCONTROLLER SYSTEM OVERVIEW

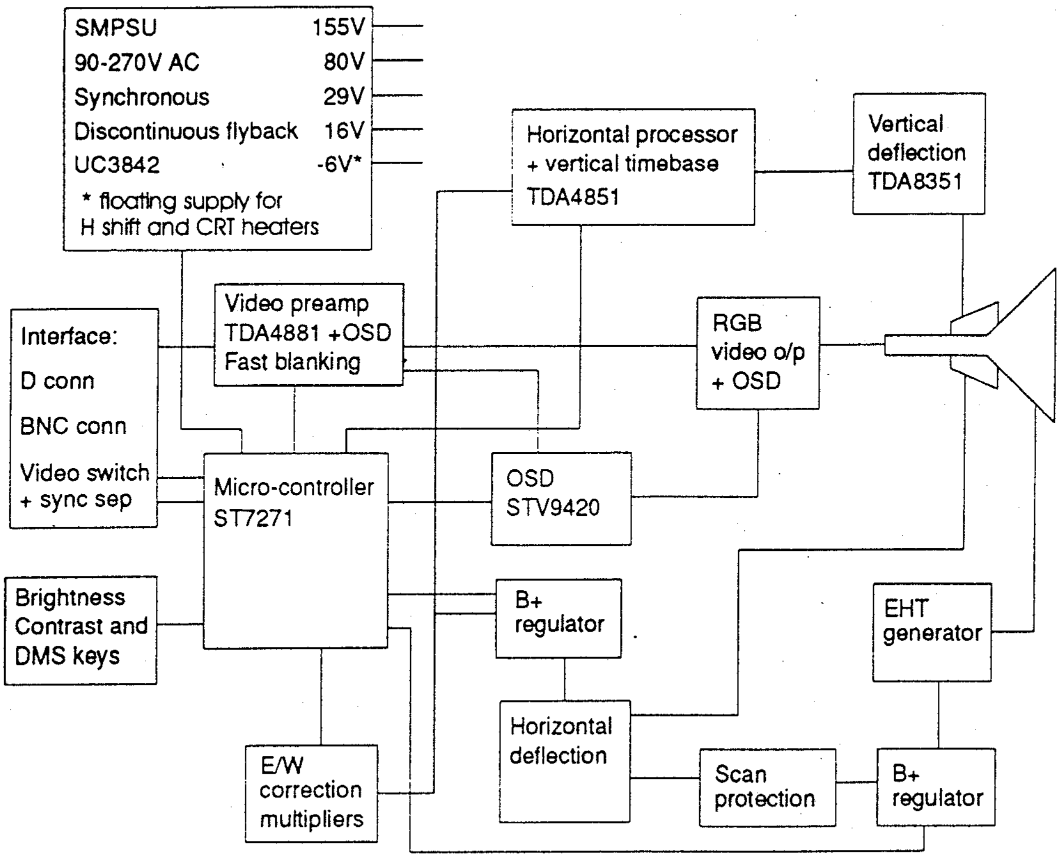

SMPSU
90-270V AC
Synchronous
Discontinuous flyback
UC3842
155V
80V
29V
16V
-6V*
* floating supply for H shift and CRT heaters
Horizontal processor + vertical timebase TDA4851
Vertical deflection TDA8351
Interface:
D conn
BNC conn
Video switch + sync sep
Video preamp TDA4881 +OSD Fast blanking
RGB video o/p + OSD
Micro-controller ST7271
OSD STV9420
Brightness Contrast and DMS keys
B+ regulator
EHT generator
Horizontal deflection
E/W correction multipliers
Scan protection
B+ regulator

Figure 1

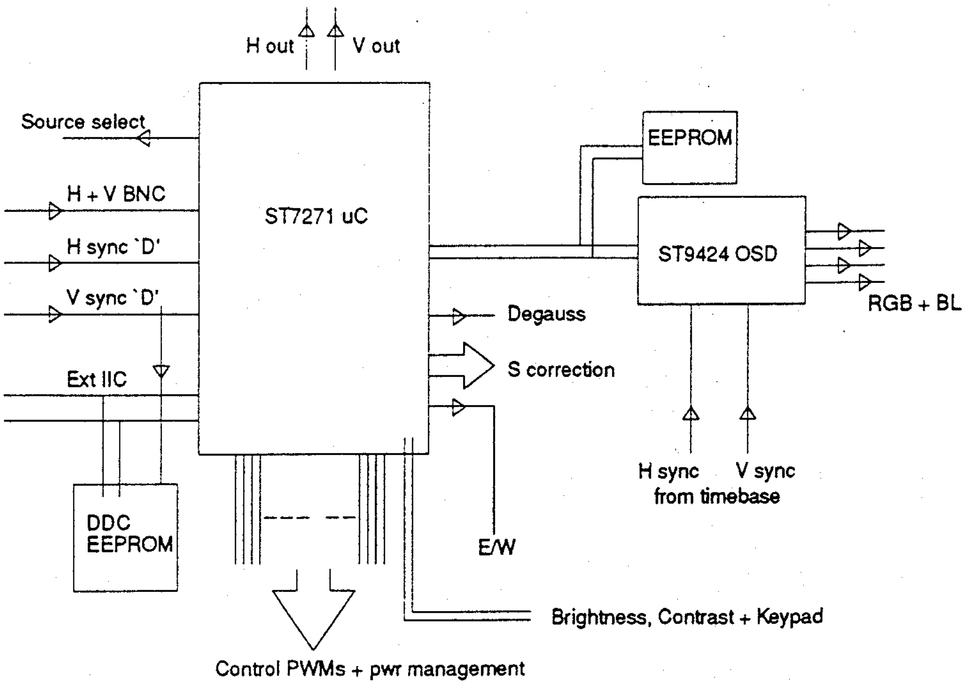

H out
V out
Source select
H + V BNC
H sync `D'
V sync `D'
Ext IIC
DDC EEPROM
ST7271 uC
EEPROM
ST9424 OSD
RGB + BL
Degauss
S correction
H sync
V sync
from timebase
E/W
Brightness, Contrast + Keypad
Control PWMs + pwr management

Figure 2

Figure 2 illustrates the major input/output functionality of the micro-controlle in the Series 14 chassis. Sync pulse inputs from the D connector and BNC inputs are routed to the uC via the tube base. The uC program allows selection of priority or A/B switching between inputs, the "source select" line controlling the video switch on the interface panel.

The "Ext IIC" lines allow connection from the 15 pin VGA input D connector, using the VESA defined pin functions, to the uC for test, service and DDC capability. Allowance has been made to fit a special EEPROM device to the I^2C bus to provide DDC1/2 functionality. In DDC1 mode, the V sync from the D connector is used to clock the EEPROM data out to the graphics controller. The I^2C is a software emulation within the uC.

Sync source selection is made directly by the uC, as is the separation of the V sync from the combined H+V sync (which is derived via a sync separator on the interface from the Sync-on-green signal) of the BNC input (see Fig 3).

A second emulated I^2C bus provides communication from the uC to the On-Screen-Display (OSD) device. Also on this bus is an optional EEPROM used for memory expansion. Sync derived from the timebases is applied to the OSD sync inputs to allow OSD operation in the absence of signals and to enable user messages for out of range signals. RGB data and fast blanking signals are output to the tube base from the OSD device.

Analog to digital convertors on board the uC are used to monitor the user brightness and contrast controls and the status of the 5 button user keypad.

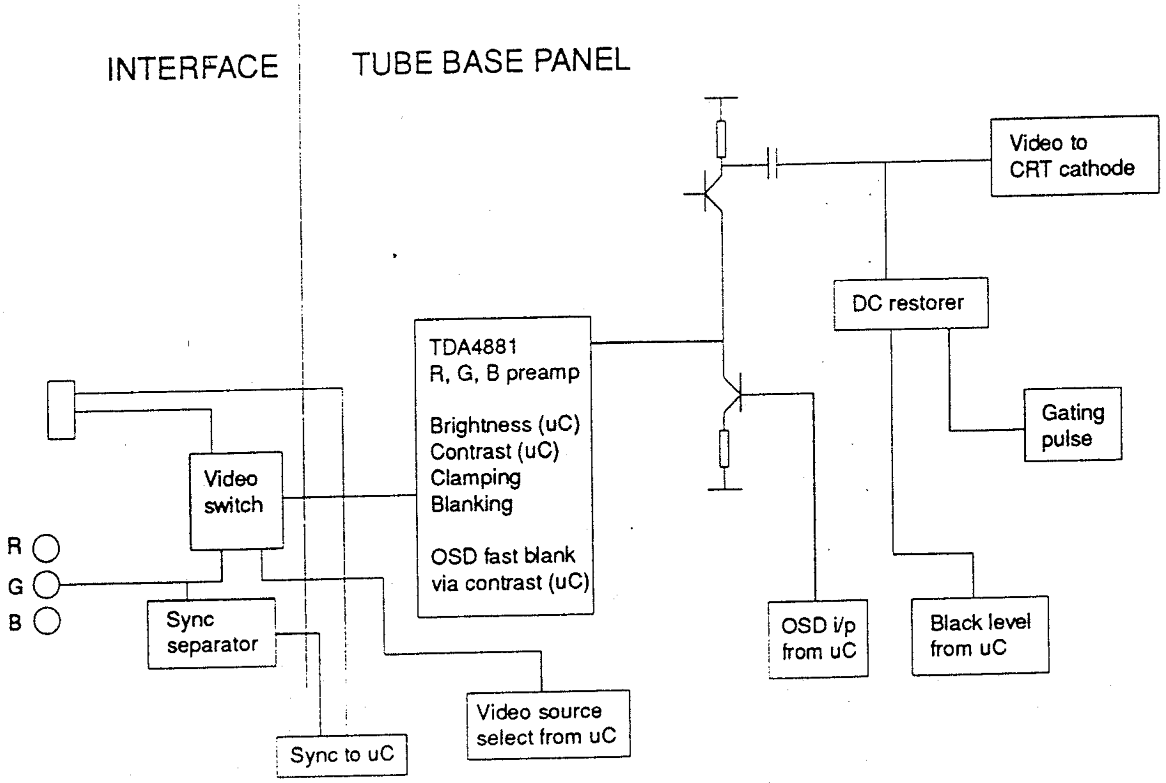
The uC has multiple PWMs and these are employed to adjust the majority of analog functions within the monitor. Port pins are used for power management in the monitor, as well as the S correction and degauss functions.

The uC also employs a special E/W waveform generator, the 256 coefficients of which are stored in an internal EEPROM. The vertical scan period is divided into 256 portions, so that each coefficient represents the correction amplitude at a particular point down the screen.

VIDEO SIGNAL PROCESSING

Please note: *This circuit description was written for models with BNC inputs. The models covered by this manual have no interface and, therefore, no BNC inputs.*

VIDEO SIGNAL PROCESSING


INTERFACE
TUBE BASE PANEL
Video to CRT cathode
DC restorer
TDA4881 R, G, B preamp
Brightness (uC)
Contrast (uC)
Clamping
Blanking
OSD fast blank via contrast (uC)
Gating pulse
Video switch
R
G
B
Sync separator
OSD i/p from uC
Black level from uC
Video source select from uC
Sync to uC

The above simplified diagram illustrates the basic Series 14 video processing from input at the interface D and BNC connectors through to the CRT cathodes.

Circuitry positioned on the tube base PCB performs the following functions:

- Grey scale tracking with brightness
- CRT black level adjustments and video DC restorers
- Suppression of displayed sync pulse effects with Sync-on-Green signals.
- Insertion of the On-Screen-Display (OSD)

IC800, TDA4881, performs signal level video processing. The IC provides individual Red and Blue gain controls via the "RGAIN" and "BGAIN" lines from the uC. Green gain is effected by adjustment of overall gain, Contrast, and modifying Red and Blue gains accordingly. Contrast, which includes beam current limiting, is controlled by the uC. Additional lines from the uC control Red, Green and Blue Black levels plus Brightness (R_BL, G_BL, B_BL and BRIGHT respectively). Mixed blanking is input to pin 9, whilst a clamping pulse derived from IC609 (pin 9) is input on pin 10.

The contrast line on the tube base panel is buffered by IC801b which provides a gain of about 1.6 so as to increase the range of the uC control from 5V up to the 8V available for IC800. The output to IC800 is fed through R822 and R823 so as to allow the OSD fast blanking input via TR800. This fast blanking capability is possible because of the wide bandwidth of the contrast input of IC800. This fast blanking places a window in the video display for the OSD information.

Any sync pulses present on the video input signals are removed within IC800 and replaced with the appropriate black level voltage. When the black level clamp pulse is high, the output video is clamped to the internal reference within the device, and also when the retrace blanking input is high. When the blanking pulse is low, ie during the active display time, the brightness control voltage at pin 1 is used to set the actual DC or black level potential. At 50% brightness, the internal black level reference and signal black levels are nominally equal.

Power supply for IC800 is 8V and derived from the 12V line by R824/D800. A further 6V supply to bias the cascode output transistors is similarly derived via R825/D801.

The video output stages are cascoded with the lower cascode transistor of each channel being within IC800. Pins 14, 17 and 20 are the collectors of the internal devices and connect to the emitters of the external upper cascode devices TR803, 808 and 813. Output stage gain and peaking is set by the network at the emitters of the internal lower cascode devices on pins 13, 16 and 19. Note that RGB OSD insertion is made at the emitters of the upper cascode devices by TR802, 807 and 812. As the OSD signals bypass IC800, they are not affected by the contrast control.

Complementary emitter followers TR804/805 etc are provided for each channel to provide low impedance drive to the CRT cathode and DC restorer circuits.

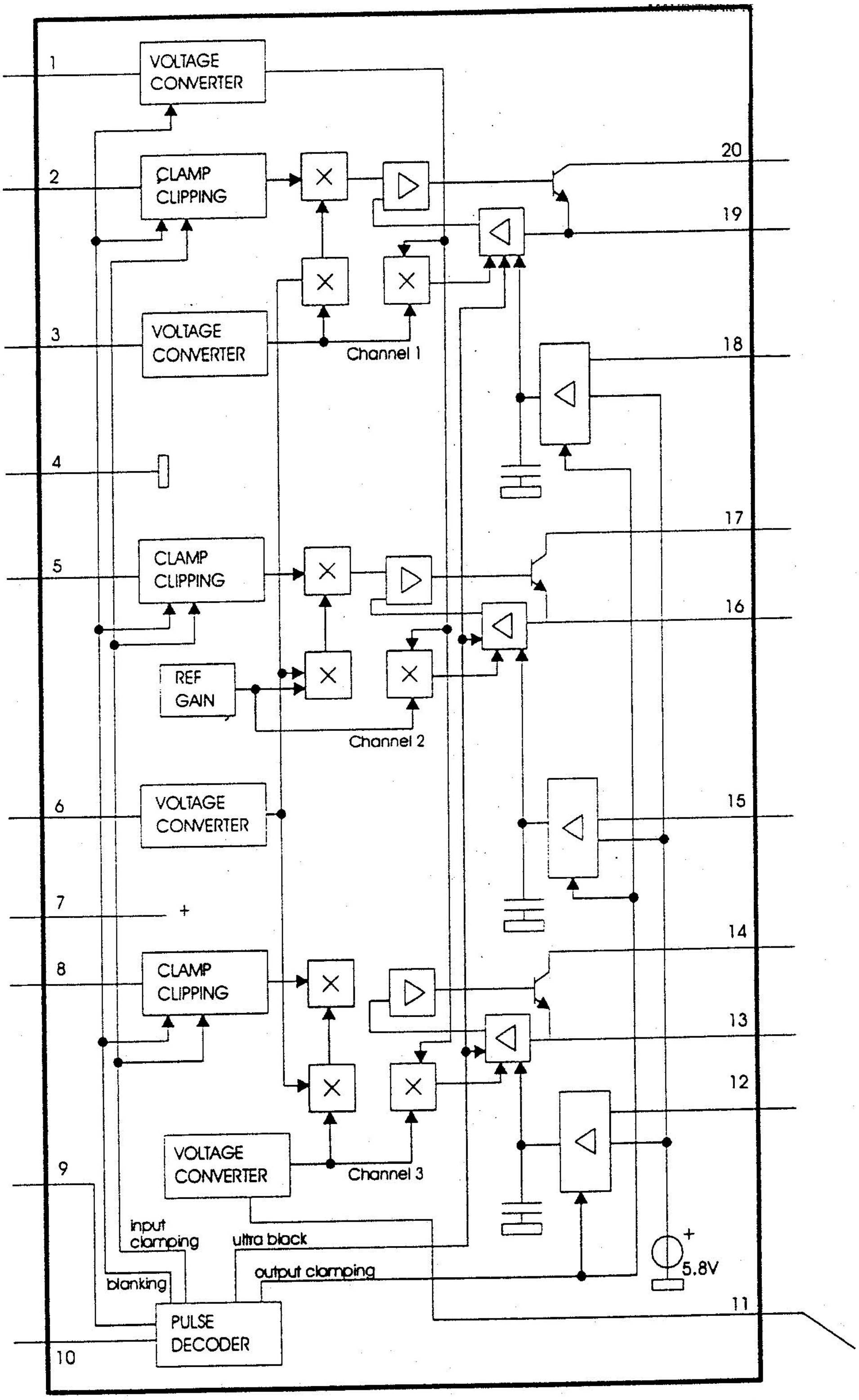
DC feedback for the TDA4881 is taken from the output amplifiers by R846, 847 and 848 etc.

The actual black level voltage for the red channel is stored on C834. The voltage is monitored by IC801c.

R872, 873 sample the voltage on C834 and compare this with the red black level control voltage from the uC. R875, 924 and 925 charge C834 towards 80V. Conduction of TR811, controlled by the amplifier IC801c, allow adjustment of the voltages at C834. Because of the presence of the negative going blanking pulse coupled through C833, D811 conducts normally only within the blanking period to charge the coupling capacitor C824. During active video D820 conducts and C833 is discharged to the same potential as C834. The DC restoration voltage is then that of C834 minus the blanking pulse amplitude of about 12V.

Blanking pulse input to the tube base is amplified and output at low impedance by TR801 and TR817. This signal is applied to each of the DC restorers via C833, C825 and C841. It is also coupled to the CRT grid via C813/R831, but DC restored to the negative grid bias of about -80V by D804/C814.

C845 is charged to -150V during normal operation and is used as a reservoir for spot suppression at turn off. When the -150V rail collapses at turn off, TR818 conducts and drags G1 to the -150V stored on C845. This has a relatively long discharge period via R830.


1
VOLTAGE CONVERTER
2
CLAMP CLIPPING
20
19
3
VOLTAGE CONVERTER
Channel 1
18
4
17
5
CLAMP CLIPPING
16
REF GAIN
Channel 2
6
VOLTAGE CONVERTER
15
7
+
14
8
CLAMP CLIPPING
13
12
9
VOLTAGE CONVERTER
Channel 3
input clamping
ultra black
output clamping
blanking
+
5.8V
11
PULSE DECODER
10

INTERNAL BLOCK DIAGRAM OF TDA4881

SYNC PROCESSING

SYNC PROCESSING

The horizontal and vertical timebase functions are accomplished by IC601. These include:

- Horizontal oscillator and phase locked loop
- PLL2 for horizontal o/p transistor storage time compensation
- Horizontal centring (phase) plus parallelogram and E/W bow compensation.
- Clamping and blanking pulse generation
- Horizontal output to driver stage
- Vertical oscillator and height control with S correction
- Differential vertical drive ramps to o/p circuit IC300

Internal Circuit Of TDA4851

The horizontal oscillator timing capacitor is C655 on pin 19, and this is charged and discharged by current mirrors controlled by the current drawn from pin 18. Frequency to voltage conversion is realised by the uC and output on the control line "HFFR". IC608a/TR607/R765/R769 form a temperature compensated current source, controlled by the "HFFR" line, to adjust the TDA4851 VCO to the same frequency as that of the incoming sync. R764 and R793 set the minimum free running horizontal frequency. C653 is the phase detector filter capacitor with R672 and C654 forming the main filter components.

Horizontal phase adjustment is accomplished by introducing a DC error voltage into the PLL2 loop. The "HPH" line from the uC introduces the DC offset via R767, in conjunction with the bias resistor R766. This input is filtered by C657 before being applied to pin 20 by the mixing resistor R763. R743 is a second mixing resistor forming the inputs for geometric corrections of parallelogram and East/West bow, whereby sawtooth and parabolic waveforms of either polarity can be added into the PLL2 also. A horizontal retrace pulse, inverted by TR603, is input on pin 2 of the device to the PLL2 loop.

The horizontal o/p from pin 3 of IC609 is fed to TR211, horizontal driver transistor, whose output is transformer coupled to the horizontal output device TR201. ***Note that the T201 drive transformer secondary has a 1KV negative going retrace pulse. Beware of shock hazard when working on this section.***

The vertical oscillator timing capacitor is C652. The vertical oscillator timing resistor is R755. This combination produces a free run frequency below 50Hz. In order to produce a more acceptable free run OSD, the "IN_RANGE" line of the uC will pull low in the absence of a signal, effectively reducing the the value of resistor between pin 15 and ground, causing the free run frequency to increase to an ergonomically acceptable level. When a signal is applied the line pulls high, D616 is reverse biased allowing normal synchronised operation.

SYNC PROCESSING

Height adjustment of the vertical scan is controlled by the input to pin 13 of IC609 from the uC "HEIGHT" line via R750/R751 and filtered by C649. Vertical S correction is set by the resistor R759 which feeds E/W parabola from pin 11 to the height input pin. Tracking of vertical S correction with height is achieved by controlling E/W amplitude in sympathy with the height control via R752. Pins 5 and 6 are the differential vertical ramp drives to the vertical output IC.

Vertical shift is applied by means of a DC offset to VERT2 via R675 from the uC "VSHIFT" line.

IC608b picks off the vertical ramp with a gain of 2 for processing as keystone and parallelogram correction waveforms. Pick off of this ramp ensures height tracking of these correction waveforms.

X-ray protection is provided by peak rectification of flyback volts from the FBT via D405/C405 being compared, by IC608c, after attenuation, with the reference voltage from D608. The output of IC608c latches high in the event of excessive increase of EHT, pulling pin 2 of IC609 high and inhibiting horizontal drive pulses to TR211.

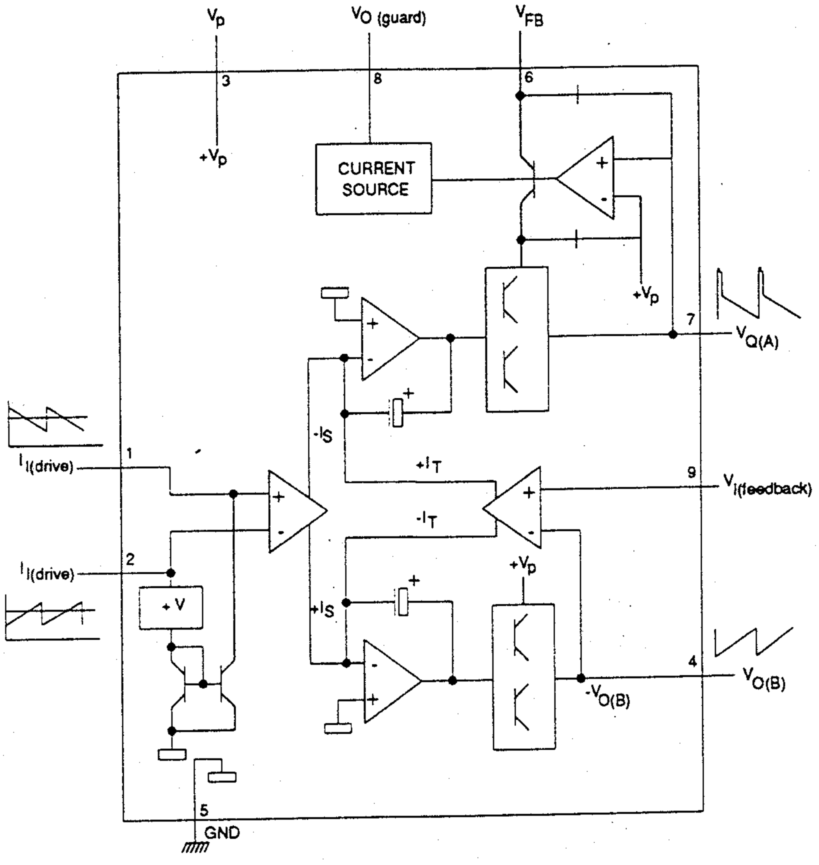
Reset of the latch formed by IC608c is only possible by removal of the supply.

VERTICAL DEFLECTION

VERTICAL DEFLECTION

The vertical deflection circuit based on IC301 (TDA8351) drives the deflection coils from pins 4 and 7 in a bridge configuration (see block diagram of internal circuit below), the two output amplifiers being driven in opposite phase. Deflection current sense resistor R305 provides feed back to pin 9 of the IC. Inputs, pins 1 and 2, are driven differentially by opposite polarity signals from IC609, TDA4851, and referenced "VERT1" and "VERT2". because the vertical timebase is DC coupled, helping to reduce vertical bounce effects, vertical shift can be controlled by a low level DC offset introduced at the amplifier input VERT2 via R675 from the "VSHIFT" line from the uC.

No vertical linearity control is employed except that the TDA4851 has a facility to set the vertical S correction by introducing a small amount of vertical parabola into the height circuit.



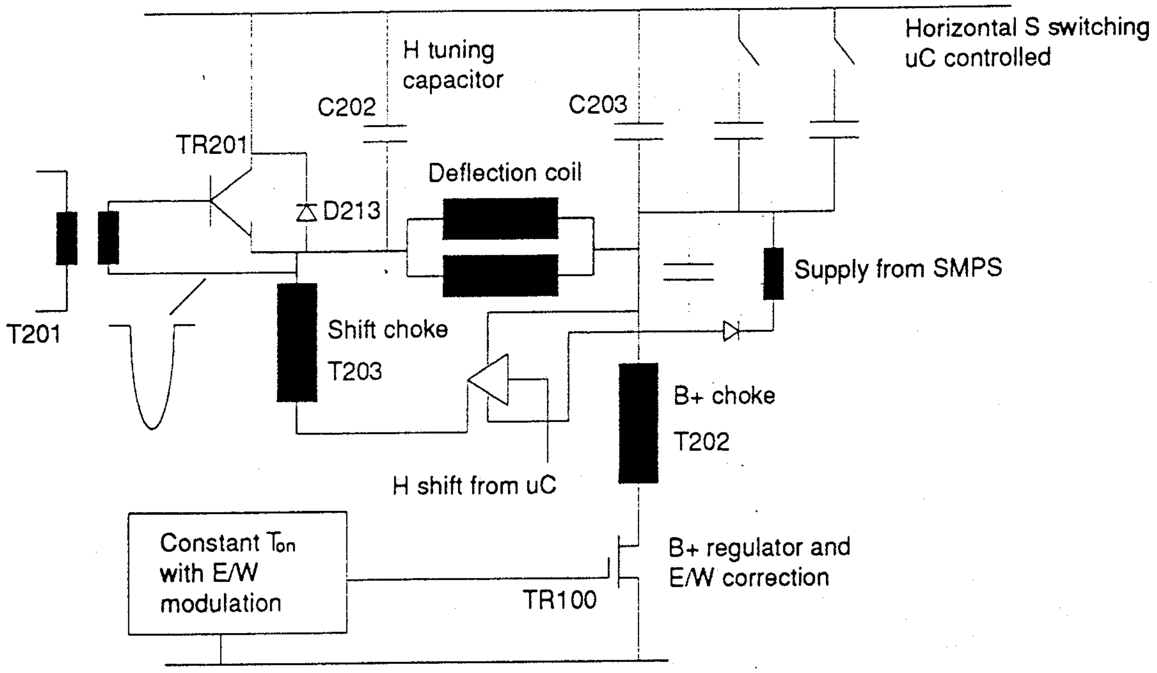
INTERNAL BLOCK DIAGRAM OF TDA8351

Power supply to the Vertical deflection is via the adjustable voltage regulator IC302. Nominal output is 13V, but note that in the power saving "SUSPEND" mode, the supply is removed by turning on TR301 via the uC command line.

An additional supply of around 50V is derived from the horizontal drive transistor collector, TR211, by D212. Zener diode D211 reduces the available retrace voltage to about 45V. Amplitude control, or height, is achieved in IC609 via the "HEIGHT" control line from the uC.

HORIZONTAL DEFLECTION

HORIZONTAL DEFLECTION


Horizontal S switching
uC controlled
H tuning
capacitor
C202
C203
TR201
Deflection coil
D213
Supply from SMPS
T201
Shift choke
T203
B+ choke
T202
H shift from uC
Constant T_{on}
with E/W
modulation
TR100
B+ regulator and
E/W correction

The above diagram illustrates the topology used in the Series 14 horizontal deflection stage. The basic deflection circuit is of the negative flyback variety, with ground referenced B+ regulator circuit. A separate stabilised EHT generator, with its own B+ regulator, is employed and the circuit described elsewhere.

During the first period of scan, D213 conducts and a sawtooth deflection current begins to flow beginning at its peak negative value. Transistor TR201 is driven on via the horizontal driver sufficiently early such that as D213 ceases to conduct, the sawtooth current continues linearly through zero current. TR201 conducts until turned off by the horizontal driver by which time the deflection current has reached its peak positive value. During retrace when both TR201 and D213 are non-conductive, C202 completes the circuit. A sinusoidal current flows in the deflection circuit with a frequency tuned by C202 and the inductance of the horizontal deflection coils. A large negative going retrace pulse occurs at the junction of C202 and the deflection coils. C203 stores energy for this deflection process and is dimensioned to provide S correction at the highest operating horizontal frequency. A fixed linearity coil L202, not shown in the above diagram, is employed to compensate for errors in scan velocity between first and second halves of scan. Losses during the deflection process are compensated by energy input via the B+ choke T202. TR100 is the power stage of the deflection B+ regulator, in conjunction with D101.

The connection of B+ choke T202 to the deflection circuit at the C203 end of the deflection coils results in an automatic shift of the raster. In order to provide centring, and opposite shift, a floating "negative" supply (also used for the CRT heater) is added into the circuit at this point. A switching output stage formed by TR208 and TR210 and driven by a PWM signal from CMOS timer IC202, is used for shift control. IC202 is triggered from the horizontal drive via a pulse differentiated by C227 and R245. The timer period is set by R236 and C214, but is adjusted by a current drained by transistor TR602 which adjusts the timer threshold on pin 5. TR602 in conjunction with IC608d form a current source, temperature compensated, controlled by the "HSHIFT" control line from the uC 1C601. A variable shift current is thus driven through the deflection coils via shift choke T203.

As the operating horizontal frequency changes, it is necessary to modify the value of the S correction capacitors.

C205, C208 and C211 which are approximately binary coded in value, can be individually switched into circuit as required by lines CS1, CS2 and CS3 from the uC. The power switches employed for this purpose are TR202, TR203 and TR204 respectively. TR205, 206 and 207 have their bases tied to a supply of about 4V derived by R218 and R220. When lines CS1, 2 and 3 are high, these transistors are OFF and allow the MOSFET devices TR202, 203 and 204 to be turned on by R203, 206, D202 etc. D202, 204 and 206 limit the ON gate source voltage of the MOSFET switches and also prevent large negative gate voltages when the devices are off. If lines CS1 etc are low, then TR205 etc turn on and prevent conduction of the MOSFETs TR202 etc thus disconnecting the auxiliary S correction capacitors.

At a predétermined horizontal frequency below 30kHz, TR1001 is activated by the "15kHz" line from the uC.

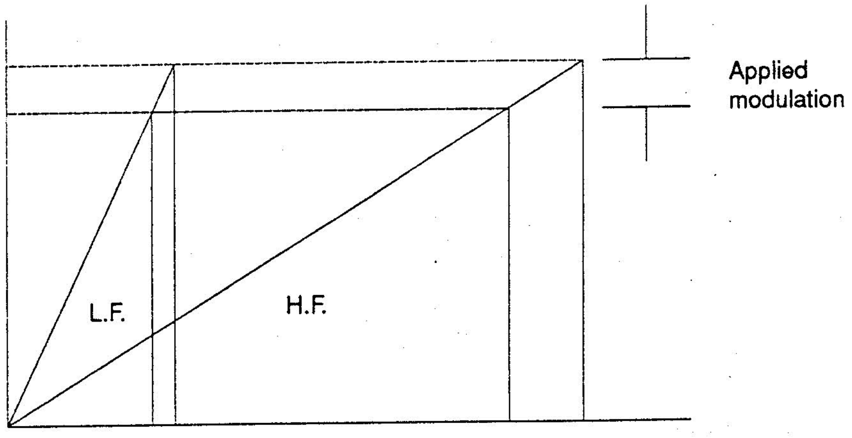
TR1001 operates relay RL1000, which switches an additional large S correction value capacitor C1003 into circuit. A relay is used to prevent the high R_{ds}on losses were a PowerMOS device used, because the majority of the deflection current would then flow through the switch. In addition to switching in C1003, the relay also switches in C1002 in parallel with the retrace tuning capacitor C202. This facility of lengthening the horizontal retrace time is useful in limiting the range of the horizontal phase control at the lower operating frequencies.

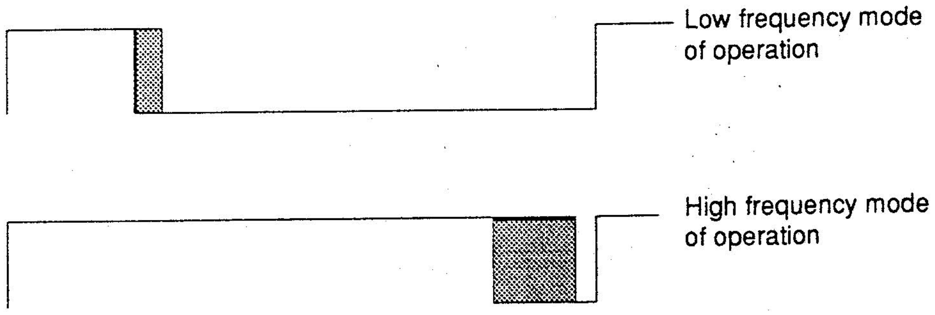
The horizontal B+ regulator TR100 is driven from the CMOS timer IC102. This timer operates in the monostable mode triggered by pulses from the horizontal driver, TR211 and differentiated by C110 and R112 etc.

Monostable timing is set nominally by C106 and R105. R105 charges C106 from the +155V line providing a degree of feed forward compensation of supply ripple and regulation. The voltage at the control input pin 5 of IC102 is modified by the "WIDTH" line from the uC. This action modifies the monostable time period, altering the duty cycle of the B+ regulator, changing the effective B+ deflection supply and thus controlling the deflection current amplitude i.e. width.

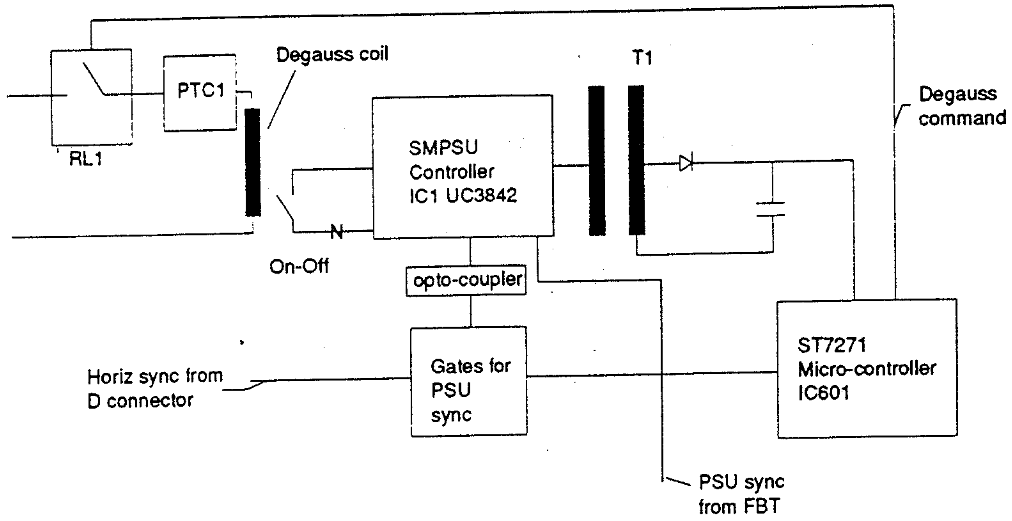
HORIZONTAL DEFLECTION

Geometric correction of East/West (parabola and keystone) is applied to the timing capacitor C106 via R790. The B+ regulator duty cycle is being dynamically modified by waveforms at vertical rates. This causes the width to be changed in sympathy. The diagram below illustrates the tracking of E/W correction amplitude with horizontal rate, by showing that the modulation applied is a fixed proportion of the monostable timing period (and hence B+) at high and low horizontal rates.


Applied
modulation
L.F.
H.F.


Low frequency mode
of operation
High frequency mode
of operation

POWER SUPPLY


RL1
PTC1
Degauss coil
T1
Degauss command
SMPSU Controller IC1 UC3842
N
On-Off
opto-coupler
Horiz sync from D connector
Gates for PSU sync
ST7271 Micro-controller IC601
PSU sync from FBT

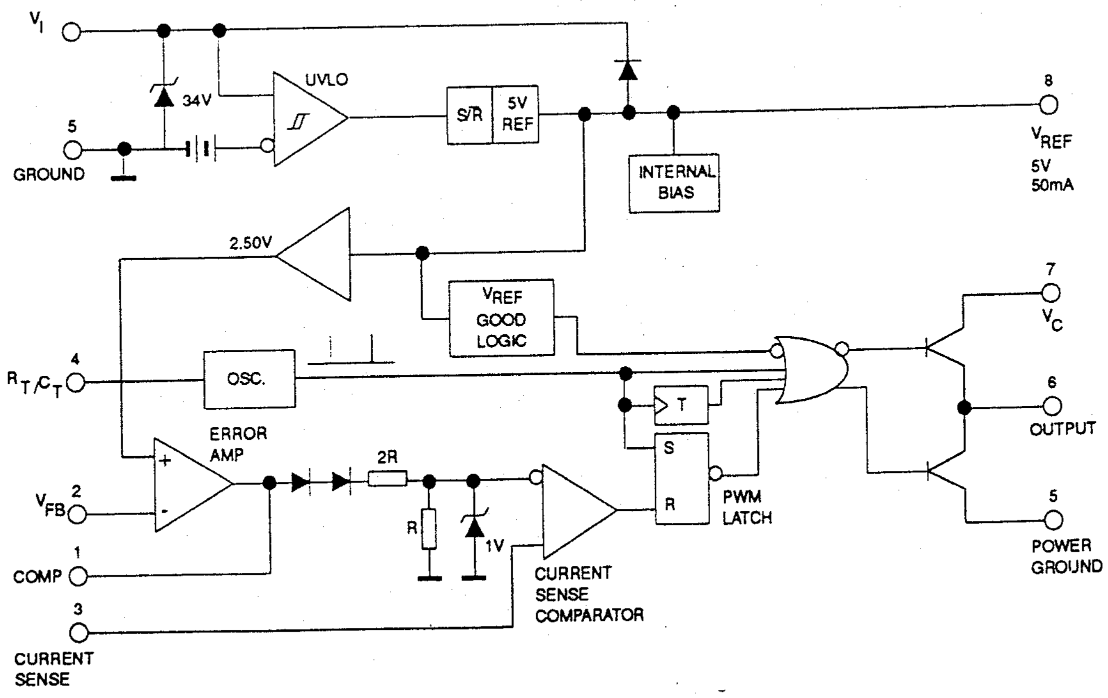
The power supply is a discontinuous mode flyback convertor, synchronised to the monitor horizontal timebase.

It features full mains range of 90-265V AC, power management and can be synchronised from 15 to 64kHz .

The control circuit is based on the UC3842 current mode controller.

Note that, in standard models, no mains isolation switch is provided. Beware of electric shock hazard. The power switch is a small signal type which removes the supply to IC1, UC3842.

Internal Circuit Of UC3842


V_I
34V
5
GROUND
UVLO
S/R
5V REF
INTERNAL BIAS
8
V_REF
5V 50mA
2.50V
V_REF GOOD LOGIC
7
V_C
4
R_T/C_T
OSC.
T
S
R
PWM LATCH
6
OUTPUT
ERROR AMP
2R
R
1V
2
V_FB
1
COMP
3
CURRENT SENSE
CURRENT SENSE COMPARATOR
5
POWER GROUND

POWER SUPPLY

Start up power is bled from the reservoir capacitor C5 by TR8, R5 & R6. TR8 is biassed on by R50, 51 & 52. TR8 supplies a constant current, independent of supply voltage, set by D34 and R7.

The oscillator free running frequency is set by R23 and C14 to a frequency just below 15khz. During normal operation, a pulse taken from an isolated winding on the FBT is used to synchronise the power supply. The input positive going flyback pulse is limited to 5V amplitude by zener D30 and R35. The flyback pulse is differentiated by C40 and R58 and a 2µs wide pulse negative going pulse, generated by IC3b, turns off TR5 to rapidly charge the timing capacitor C14, so the timing cycle is terminated. During unsynchronised operation such as SUSPEND mode, TR4 conducts and connects R41 in parallel with R23 increasing the operating frequency to a higher inaudible frequency.

A pair of Power MOS devices TR1 and TR2 are driven in parallel from the output pin 6 of IC1. This effectively reduces the R_{ds}on of the combination over a single device to reduce power dissipation. R25A, B, C are a parallel resistor combination used as the current sense for the current mode controller IC1. R18/R24 attenuate the current sense voltage to the required level, whilst C15 filters spurious components from the signal. TR7 is used to add a frequency dependent voltage to the current sense to reduce the available output power from the supply with frequency. The 5V pulse at D30 is peak rectified by D28 and charges C32. C32 is then discharged by R42. The average voltage at C32 depends on the period before the next charging pulse occurs. This voltage is integrated and the resultant voltage added into the current limit circuit by TR7/R44. Thus the power available at higher frequencies is automatically reduced.

Primary side voltage feedback for stabilisation is derived from a winding on the SMPS transformer T1 by D7 and C10. This voltage is attenuated by R13, R16, R25 and VR1 for input to the error amplifier on pin 2 of IC1, where it is compared with the internal 2V5 reference voltage. VR1 is used to adjust the PSU output voltage . Amplifier gain and compensation is set by R14/C11. In the event that the feedback were to become open circuit, D8 provides a limit to the maximum output voltage which will ensue.

Once operating the PSU derives its supply from T1 via D6, R12 and C8.

TR6 and associated components form a 'brown out' protection scheme. R64, 65, 66 & 67 monitor the input supply voltage. If the voltage at R67 falls below the IC supply voltage, TR6 conducts and increases the voltage at pin 2 of IC1. The effect is to reduce the PSU duty cycle and consequently the PSU output voltage. This action limits the available power from the PSU at very low supply voltage, ie 'brown out'.

In order to cater for power management requirements, a circuit comprising OPTO1 and IC3 has been provided.

POWER SUPPLY

At power up, a normal start sequence is initiated by bleeding power from the reservoir C5 until the PSU begins operation and establishes its own power supply via T1. During this period, C31 begins to slowly charge via R32. Whilst the voltage across C31 is lower than that at the junction of R33 and R34, comparator IC3a output is not conductive. When the voltage across C31 exceeds the voltage at the junction of R33 and R34, IC3a output will ground the error amplifier output of IC1, thereby inhibiting operation of the PSU. This will occur unless the opto-coupler IC1 is conductive and discharges C31. The opto can be conductive if :

1. The uC (IC601) "OFF" line is high
2. Horizontal sync pulses from the D connector input are present.

The time constant of R32 and C31 is long enough at power up, for the supply rails to stabilise, and the uC to reset and begin normal program execution. The power supply is then under direct control of the uC. Were the PSU to be in the lowest power "OFF" state, operation can be restarted by:

1. Applying horizontal sync to the D connector
2. Operating the power switch (i.e. turn off then on again).

The power supply provides the following supplies:

1. +155V for EHT and deflection circuitry
2. +80V for the video output and video dc restorers
3. +29V for the horizontal drive circuit
4. +16V for the vertical and signal processing circuitry (+12V)
5. The CRT heater supply. This nominal 6V6 supply is floating for use as a "-ve" supply for the horizontal shift circuit and sits at a potential determined by the operating frequency of the horizontal deflection.

Power input to the monitor is via F1 and a normal pi type mains filter, employing a common mode choke. R2 provides a discharge path for the Class X capacitors C1 and C2. A rectifier bridge comprising D1 through D4 charges C5 with inrush limiting by R1.

Voltage protection for TR1 and TR2 power switches is provided by the clamp network formed by D5, C6, R4A and R4B. DV/DT protection is afforded by C12, D12 and R20.

At the output, D14, C18 and R26 provide voltage protection for D13, whilst the LT supplies are over-current protected by 0R22 fusible resistors, or in the case of the 16V line, by fuse F2.

Note that degaussing is controlled at power up by the uC. This provides a programmable power up delay time for degauss and also provides the manual degauss facility. Degauss employs a 2 terminal type positive temperature coefficient thermistor PTC1, connected via a relay. This relay RL1, is driven via TR3 on the isolated side of the PSU by command from the uC "DEGAUSS" line.

Power Management

The following power management states are defined by the VESA organisation:

State	Signals Horizontal	 Vertical	 Video	Power Consumption Typical	Recovery Time typical
On	Pulses	Pulses	Active	Normal 85W	N/A
Stand-by	No pulses	Pulses	Blanked	60W	1 sec
Suspend	Pulses	No pulses	Blanked	20W	2 sec
Off	No pulses	No pulses	Blanked	2W	8 sec

In the 'stand-by' state, all circuitry remains active, but the video stages will be driven to black level.

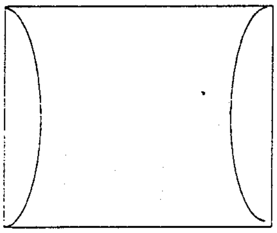
In the 'suspend' state the horizontal deflection, EHT generator and vertical deflection circuits are disabled. Small signal circuits are operative and the uC is operational. Recovery is possible by application of sync signals or operation of the power switch (Switch OFF then ON again).

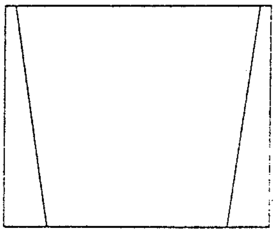
In the 'off' state all circuitry including the Switch mode PSU is inoperative. Recovery is possible by application of sync through the D connector, or operation of the power switch (Switch OFF then ON again).

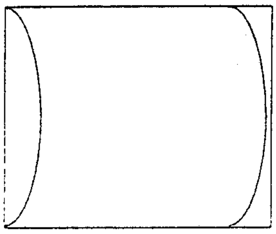
GEOMETRY CORRECTION

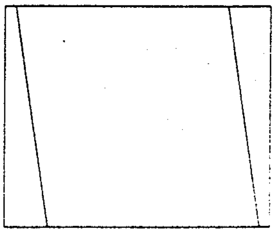
GEOMETRY CORRECTION

Geometry correction facilities are in effect in two separate categories. Those applied as raster width modulation as are East/West parabola and keystone, and those applied as picture phase modulation as are parallelogram and E/W bow.


Raster Pincushion; variable w/f


Raster trapezium adjustment


Phase E/W bow correction


Phase parallelogram correction

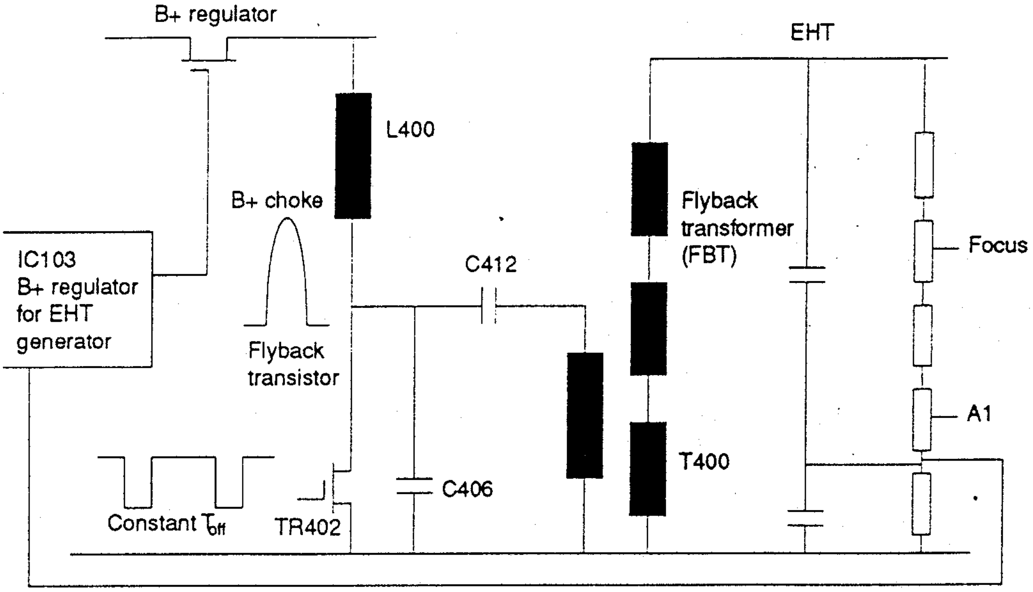
Amplitude control of the above correction waveforms are generated in similar fashion by the use of transconductance amplifiers as variable gain blocks.

Raster East-West pincushion is amplitude (gain) controlled by IC602a. The control current "EWAMP" from the uC being set through R672. This waveform is applied to the horizontal B+ control circuit via R108 and R790 to modify the charging of C106.

In the case of keystone, parallelogram and E/W bow, bi-directional amplitude controlled waveforms are obtained from IC603b, IC603a and IC602b respectively. A proportion of the sawtooth or parabola waveform is added to the amplifier output such that at nominal gain, the inverted amplifier output cancels the added waveform. Change of gain of the stage then adds or subtracts a waveform from the nominal zero output allowing selection of either polarity of signal. The uC controls each of these stages via the "KEY", "PARA" and "EW_BAL" (or E/W bow) lines.

EHT GENERATOR

EHT GENERATOR


B+ regulator
EHT
L400
B+ choke
Flyback transformer (FBT)
Focus
IC103 B+ regulator for EHT generator
C412
Flyback transistor
A1
T400
C406
Constant T_{off}
TR402

The above diagram is a simplified version of the EHT generator showing the major functional parts.

The circuit is similar in configuration to a conventional horizontal deflection stage, with the primary of the flyback transformer T400 taking the place of what would have been the deflection coils. This topology ensures that a relatively consistent stored energy is available for the EHT generator during retrace, and provides an efficient low impedance source for the EHT. EHT regulation is accomplished by feedback from the sensing network, in series with the EHT bleed forming the focus and A1 supplies, to the B+ regulator.

TR404 is driven from a monostable circuit formed by the dual comparator IC201. The monostable produces a constant T_{off} pulse, which is slightly longer than the flyback period of the EHT generator. This guarantees that TR404 is always off during the flyback period, but is conductive early in the following "scan" period. (Note that TR402 has a built in rectifier which conducts during the recovery period following retrace). The constant T_{off} driver technique, made easier by the use of a voltage driven Power MOS device for TR402, helps resolve some of the problems encountered in covering the very wide range of horizontal frequency required of the Series 14 monitor.

EHT GENERATOR

The positive going edge of the horizontal output driver, TR211 and which initiates retrace for both the horizontal deflection and the EHT generator, is differentiated by C223 and R224/R225. The resulting positive spike turns the output stage of IC201a to the OFF state. This allows C222 to charge via R230 until it reaches the 6V reference formed by R226/R227. During this period, the output of IC201b is low (constant T_{off}). At all other times the output of IC201b is high. The output of IC201b drives the complementary output stage formed by TR213 and TR214. These devices provide a low impedance pull up/down gate drive, for the EHT generator device TR402.

During the first period of the "scan" time, TR402 is conductive by virtue of the built in recovery/efficiency diode. During the remaining period prior to flyback, the device is turned on by the constant T_{off} driver. During this period a sawtooth current flows in the the circuit formed by TR402, C412 and the primary of the flyback transformer. During flyback, when TR402 is OFF, C406 forms a tuned circuit with T400 (FBT) primary causing a sinusoidal current to flow during (and establishing) the flyback period. This results in the normal half sinusoid flyback pulse appearing across C406 and also across the primary of the FBT T400. The step up turns ratio to the EHT winding of TR400 and the internal series rectifiers generate the EHT required for the CRT. Losses in the FBT primary circuit and that due to EHT loading, are replenished during the flyback period by the B+ regulator circuit via L400.

At power on, TR403 is held conductive for a period by C407, which charges by R414. R415 limits the base current of TR403. This action ensures that TR404 is held off during power up, when it would tend to be otherwise held on. At switch off, D406 rapidly discharges C407 such that if power is rapidly reapplied, the limiting action can still take place. Drive pulses to TR404 are coupled from the ground referenced driver circuit by C408, and dc restored by D407.

The switching waveform present at the drain of TR404 is ac coupled and dc restored by C410 and D411. D410 and C411 derive a -155V supply used for G1 bias and switch off spot suppression.

TR102/TR105 form the driver for TR403/404 and buffer the output from pin 1 of IC103a.

IC103 forms the pulse width modulator control circuit for the EHT generator. C103 is charged by R102 from the 155V supply (this provides feedforward rejection of supply ripple/variation) to produce a sawtooth at horizontal rate. Pulses from the horizontal driver transistor TR211, which are differentiated by C110 and R112 etc, are coupled to pin 5 of comparator IC103b. Pin 6 of IC103b is biassed so that during the positive going pulse at pin 5, the ramp generator capacitor C103 is discharged. Actual output pulse width is adjusted by modulation of the input at pin 2 of IC103a. The EHT generator is disabled by the scan/eht interlock circuit when TR400 conducts and takes pin 6 of IC103b low via D111 and R144.

EHT GENERATOR

EHT voltage is sensed by the series combination R131, R412 and VR100. VR100 provides the overall EHT adjustment and is adjusted to compensate for circuit tolerance including that of the FBT focus and A1 bleed resistor network. Dual op-amp IC101 provides a high impedance buffer (IC101a), for the attenuated EHT sense voltage, whilst IC101b forms an error amplifier to provide a correction voltage at its output. Output of IC101b controls, via R100/R116, the timing ramp threshold of IC103a, allowing adjustment and stabilisation of the EHT generator. A nominal 6V reference is provided for IC101b by R113 and R137. D108 prevents EHT overshoot at power down by reducing the reference voltage in sympathy with the 12V supply, effectively reducing EHT with falling 12V. D107 prevents gross overload of IC101 input.

NOTE:

VR100 is totally encapsulated in flofix 29/12/180 (hot melt). This is to prevent unauthorised adjustment and to prevent the emission of X Ray radiation.

Replacement of tubes and EHT transformers may require EHT adjustment to be carried out. In order to do this, remove VR100 from the circuit board and replace with a new part. Ensure that the control is turned fully clockwise (lowest EHT) before switching on the set. Set the EHT to the recommended value, then totally cover the potentiometer in adhesive as specified above.

DYNAMIC FOCUS PCB

OPERATION

This module produces a fixed amplitude (500Vpp) and fixed mean level (300V dc) mixed H+V parabola into a 50pF load when driven from a variable frequency (15-64kHz) variable voltage (20-45Vpp) horizontal parabola, a variable amplitude (380-450 Vpp) 'flyback pulse' supply and a fixed amplitude (2 Vpp) vertical parabola.

High voltage amplifier 'C' uses a class C o/p stage to increase efficiency and reduce loading on the EHT 'flyback' pulse. The low output impedance reduces distortion of the horizontal parabola waveform. Since high voltage PNP transistors are not readily available, cascaded low voltage devices are used which also distributes any heat generated.

Block 'D' generates a dc voltage 'Vp' proportional to the peak to peak amplitude of 'Vout'. Block 'A' is a combined differential amp/multiplier. The diff amp compares 'Vref' with 'Vp'. Any difference generates an imbalance and changes the gain of the multiplier.

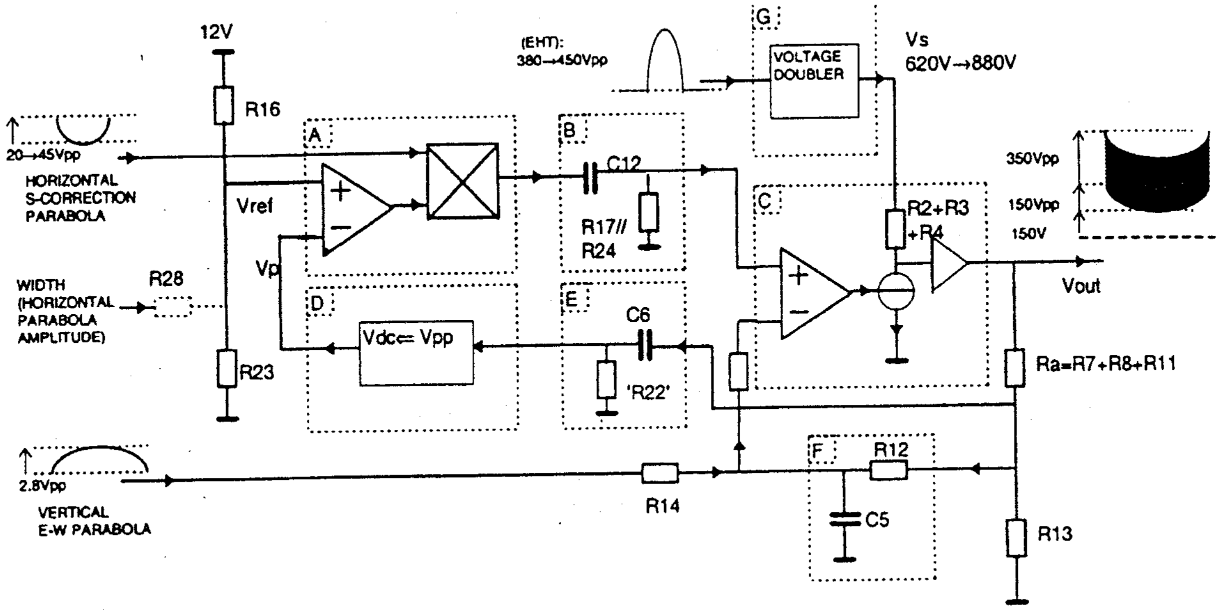
Using negative feedback the gain of the system is adjusted to maintain a constant peak to peak amplitude 'Vout' independent of either the input horizontal parabola amplitude OR gain variation in the discrete active devices used.

Blocks 'B' and 'E' block dc and filter out the vertical frequency parabola to prevent this amplitude modulating the horizontal parabola.

Block 'F' allows a high level of negative feedback at LF for DC stabilisation and supply rejection (Note: 'Vs' varies with horizontal frequency and EHT loading) but maintains a high gain at horizontal frequencies to maximise the dynamic range of the multiplier.

Inverted vertical parabola is fed to the inverting input of 'C' and added to the horizontal parabola. L1 limits CRT flashover current and forms a tuned circuit with the load capacitance to optimise the horizontal parabola shape at high horizontal frequencies.

BLOCK DIAGRAM


12V
R16
20→45Vpp
HORIZONTAL
S-CORRECTION
PARABOLA
Vref
A
+
−
Vp
WIDTH
(HORIZONTAL
PARABOLA
AMPLITUDE)
R28
D
Vdc= Vpp
R23
B
C12
R17//
R24
E
C6
'R22'
(EHT):
380→450Vpp
G
VOLTAGE
DOUBLER
Vs
620V→880V
C
R2+R3
+R4
350Vpp
150Vpp
150V
Vout
Ra=R7+R8+R11
2.8Vpp
VERTICAL
E-W PARABOLA
R14
F
R12
C5
R13

TEST PROCEDURE

BEFORE APPLYING MAINS CHECK THE FOLLOWING:

- Check all electrolytic capacitors for the correct orientation and polarity.
- In order to isolate the high voltage areas of the circuit (horizontal deflection and EHT stages), remove T202, T203 and LK115 respectively.
- Connect a dummy load to the SMPSU across the 155V rail between L2/+ end C201 and ground rated at 820R 40 watts.
- Turn G2 fully anti-clockwise.
- Apply VGA signal to SK502 (D type input).
- Connect the CRT scan coils to PL201.
- Connect the degauss coil to PL2.
- Using a DVM, check for short circuits on all power rails. The voltage rail is marked adjacent to the node by its value in a rectangle.

Node	Voltage Rail
L2/C201	155V (B+)
D15/C21	80V VIDEO
R27/C22	29V
R30/C24	16V
D20/C26	12V
IC611/C642	5V

Connect scope probe (100:1) to TR1/TR2 drain.

NB: Scope earth should be connected to PSU 0V (e.g. TR1 heatsink). The PSU is live to mains and, consequently, an isolating transformer must be used during this test procedure (see below). Whenever the IEC mains lead is connected to the chassis, then the SMPSU section of the PCB is live. Therefore the Mains IEC connector must be recognised as the **"MAINS DISCONNECT DEVICE".**

NB: It is advisable to switch the monitor on then off after disconnecting the mains in order to discharge the bulk capacitor C5 more quickly when servicing.

- Connect DVM to L2 (main HT rail) with respect to chassis 0V (e.g. TR201 heatsink).

POWER SUPPLY CHECKS

1. Connect chassis to an isolated mains supply (see warning above) and, using a variac, wind up the mains to 240V. Check with a scope (100:1 probe) on TR1 drains (see warning above). (W/F 1)
2. Check for 155 volts +/- 20V on DVM at C201 end of L2. Switch off monitor and turn down variac to 90V mains. Switch on monitor and check SMPSU powers up. Reset the variac to 240V.

3. Adjust the 155 volts using preset VR1 to 155 +/- 1.

4. Check all voltage rails at the following points with the DVM with respect to chassis 0V:-

Node	Voltage Rail
D15/C21	80V +/- 3V
R27/C22	29V +/- 3V
R30/C24	16V +/- 0.5V
D20/C26	12V +/- 0.5V
IC611/C642	5V +/- 0.25V
IC302 centre leg	13V +/- 1V

5. Check the following isolated voltages with the DVM with respect to isolated 0V (e.g. LK110):-

Node	Voltage Rail
R28/C23	- 6.3V +/- 0.2V
R45/C35	- 7V +/- 0.5 V

6. Check for regulation of the main 155V rail from 80 - 265V mains (1V variation).

7. Switch off the mains supply and remove scope probe.

SYNC PROCESSING AND HORIZONTAL DRIVE

1. Switch on monitor.

2. Monitor with the scope:-

   Horizontal sync in IC601 pin 29 (W/F 5)
   Vertical sync in IC601 pin 27 (W/F 4)

3. Check for reset pulse on IC605 pin 11. (W/F 15)

4. Check for 8Mhz clock on IC605 pin 6 (W/F 16)

5. Connect the scope probe to IC 601 pin 20 and check for the vertical flyback pulse. (W/F 6)

6. Connect the scope probe to IC609 pin 8 and check for sandcastle pulse (line and field components). (W/F 30)

7. Monitor with the scope:-

   Horizontal sync out IC601 pin 30 (W/F 8)
   Vertical sync out IC601 pin 26 (W/F 10)

8. Check for the clamp pulse from the micro on IC601 pin22 (W/F 11)

9. Check for line drive on IC609 pin 3. (W/F 32)
10. Check for synchronism over the band with input signals at the extremes of the horizontal frequency range.
11. Check horizontal drive at collector of TR211. (W/F 49)

VERTICAL TIMEBASE CHECKS

1. Check for east/west parabola waveform on IC601 pin 2. (W/F 12)
2. Check for vertical drive on IC609 pin 5. (W/F 31)
3. Check for frame output waveform on IC301 pin 7. Note the ramp component and the amplitude of the flyback section. (W/F 39)
4. Check for synchronism between vertical syncs (IC601 pin 27) and frame output (IC301 pin 7) over range 44 - 125 Hz.

CONSTANT Ton DRIVER

1. Check for differentiated trigger pulses at IC201 pin 3. (W/F 46)
2. Check for the timing ramp (EHT) at IC103 pin 7. (W/F 40)
3. Check for constant "On" period drive pulses to the EHT generator circuit at the emitters of TR213/4.

   In particular note the duration of the "on" pulse, typically 7 uS. (W/F 43)

B+ REGULATOR CHECKS

1. Check for differentiated trigger pulses at IC102 pin 2. (W/F 36)
2. Check for the timing ramp (scan) at IC102 pins 6 and 7. (W/F 37)
3. Check for "PWM" square wave on B+ regulator output on TR100 drain. (W/F 47)
4. Switch off, disconnect mains and dummy load and refit chokes T202 and T203.

HORIZONTAL OUTPUT

1. Reconnect mains and switch on monitor.
2. Using scope (with 100:1 probe) at TR201 emitter check for negative going flyback pulses. (W/F 51)
3. Check for horizontal rate parabola across the "S" correction capacitors, at junction R205/C203. (W/F 50)
4. Check that with the line scan functioning, the scan/EHT interlock is held off indicated by an active high condition (+12V) on D403 cathode.

5. Switch off, disconnect mains and refit link LK115.

EHT GENERATOR

1. Reconnect mains and switch on monitor.
2. Monitor with a 100:1 probe, the drain of TR402, and the EHT voltage at the final anode of the CRT using a suitable EHT probe. (W/F 44)
3. Adjust VR100 (Set EHT) for "24.0 KV".
4. Gradually increase the A1 control and ensure that the EHT voltage remains stable at 24.0 KV.
5. Switch off, disconnect mains and remove EHT probe.

X-RAY PROTECTION

1. Apply a DVM to D405 cathode and check that the DC reading is 35V DC (+/- 1V).

   Apply 50V DC from an external power supply to the cathode of D405 and ensure the horizontal deflection stage shuts down as the X ray protection circuit becomes activated. (IC609 pin 3 - horizontal drive waveform inhibited). Remove 50V supply and check that the drive pulses remain inhibited until the monitor is powered down.

   NOTE: If an external supply of 50V is not available, this can be done by connecting a 20K resistor between +155V rail and D405 cathode.

2. Switch off the monitor, remove 50V supply (or resistor) while simultaneously pressing the Manual Degauss button switch the monitor on. Check horizontal deflection is re-established.

PICTURE SET-UP

NOTE: Set customer controls to centre indent.

1. Increase G2 until picture is visible. Adjust both focus controls for optimum.
2. Select a 31.5 kHz (VGA) signal source with a crosshatch pattern.
3. Select On Screen Display Menu.
4. Select "SPECIAL", "SPECIAL2" then "AUTOLOCK". The image should disappear for a second and return as a correctly locked image.
5. Select "GEOMETRY2".
   - Select Horizontal Raster Shift and with the Increase/Decrease buttons check that the raster can be centred.
6. Exit from "GEOMETRY2" to "GEOMETRY"

- Select Horizontal Phase and with the Increase/Decrease buttons adjust for a correctly centred picture.

- Select Width and with the Increase/Decrease buttons adjust for a correct size picture.

- Select Vertical Shift and with the Increase/Decrease buttons adjust for a correctly positioned picture.

- Select Height and with the Increase/Decrease buttons adjust for correct picture size/aspect ratio.

7. Select "GEOMETRY2"

   - Check that the functions E/W Balance, Keystone, Parallelogram and E/W Parabola work and that an image with straight verticals aligned to the bezel can be achieved.

8. Return to On Screen Display Menu and exit from OSD to store these settings.

9. Press the "Manual Degauss" button and check that the image shimmers then returns to its stored settings with no corruption.

10. If available check with 15kHz and 64kHz sources that the image is stable and noise free.

POWER MANAGEMENT

1. With the horizontal and vertical syncs enabled and the monitor switched on it should be in NORMAL mode. The incoming image should be displayed on the screen, LED1 should be ON (GREEN) and D700 (Tri-colour) should be YELLOW.

2. Disable the horizontal syncs with the vertical syncs enabled, the monitor should go into STANDBY mode. The screen should go blank, LED1 should be ON (GREEN) and D700 (Tri-colour) should be YELLOW.

   Enable the horizontal syncs, the monitor should return to NORMAL mode.

3. Disable the vertical syncs with the horizontal syncs still enabled the monitor should go into SUSPEND mode after 5 seconds. The screen should go blank, LED1 should be ON (GREEN) and D700 (Tri-colour) should be GREEN.

   NB: Should the monitor fail to SUSPEND it may be that this mode has been previously disabled or a longer time selected check DPMS settings via the On Screen Display Menu.

   Enable the vertical syncs, the monitor should return to NORMAL mode.

4. Disable the vertical and horizontal syncs the monitor should go into SUSPEND mode after 5 seconds (as above) and after a further 5 seconds should go into OFF mode. The screen should go blank, LED1 should be ON (GREEN) and D700 (Tri-colour) should be OFF.

NB: Should the monitor fail to go into "OFF" mode it may be that this mode has been previously disabled or a longer time selected check DPMS settings via the On Screen Display Menu.

Enable the vertical and horizontal syncs, the monitor should return to NORMAL mode.

5. With the vertical and horizontal syncs enabled depress the mains on/off switch the monitor should go into the MAINS SWITCHED OFF mode. The screen should be blank, LED1 should be OFF and D700 should be OFF.

VIDEO CHANNEL SET-UP

1. Switch on the monitor and check using scope (100:1 probe) for 10V P-P negative-going mixed blanking pulses at grid 1 (SK801 pin 5). (W/F 142)

   Check also that when the monitor is switched off, the spot suppression circuit is activated. (Indicated by a -150V transient of 3 seconds duration at the grid 1. In addition there should be no switch off spot on the CRT) (SK801 pin 5). (W/F 142)

2. Initial Conditions:

   - Set G2 to minimum.
   - Select a 31.5kHz (VGA) signal source with a 'Full Black Screen' pattern.
   - While simultaneously pressing the Manual Degauss button switch the monitor on.
   - Select On Screen Display Menu.
   - Select "SPECIAL", "SPECIAL2" then "CLAMP BP" to clamp on the back porch of the incoming signal.
   - Exit to main menu and select "COLOUR".
   - Select red and blue gains and set to 50%.
   - Select "COLOUR2".
   - Select Preset Contrast and adjust to 100%.
   - Select black levels and set geen to 50% and red and blue to minimum.
   - Set customer brightness to 50% (VR700 - centre indent).
   - Set customer contrast to minimum (VR701).

3. Using DVM check the following voltages with respect to chassis 0V:

Node	Voltage
IC801 pin 4	12V +/- 0V5
IC800 pin 7	8V +/- 0V8
D801 cathode	6V +/- 0V5

4. Greyscale setting.
   - View screen and advance G2 control to obtain a faint green raster.
   - Select and increase/decrease red and blue black levels to obtain a faint 'grey' raster.
   - Select a 'Full White Screen' pattern from the signal source.
   - Increase the customer contrast to 50% (VR701 - indent position) and adjust focus control for optimum.
   - Select and increase/decrease the red and blue gains to achieve a 'neutral' peak white.
   - Increase the customer contrast to 100% and check maximum brightness is (beam) limited.
5. Exit from OSD then switch monitor off

COMPOSITE SYNC INPUT

1. If available feed a suitable RGB (Sync on Green) signal with a crosshatch pattern via the BNC inputs.
2. Check for resistance of greater than 300R between each BNC socket 'outer' and 0V (ground). Depress SW502 and check resistance is less than 1R. Press SW502 again to return to 'differential' inputs.
3. Switch monitor on
4. Turn COMPENSATION pots VR501, VR521 and VR541 fully clockwise/anticlockwise in turn. Check that h.f. components (e.g. edges) of waveforms at collectors of TR502, TR522 and TR542 (respectively) increase/decrease. Set compensation pots to fully anticlockwise position. (W/Fs 101,102,103).
5. Check waveforms at emitters of TR505, TR525 and TR545. Depress SW501 (select HI-Z termination) and check amplitudes of the waveforms double. Press SW501 again to return to 75R termination. (W/Fs 107,108,109)
6. Via the OSD menu select to clamp to the back porch (CLAMP BP).
7. Visually check that the image is stable, free of noise and that there is no significant difference between the luminance of the vertical and horizontal lines. Repeat the check with an inverted crosshatch pattern (i.e. white background).

DRIVE/DEFLECTION PCB
COMPONENTS LIST

DRIVE/DEFLECTION PCB COMPONENTS LIST

PART NUMBER: AO5837101

	COMPONENT	DESCRIPTION	IDENT
	CAPACITORS		
⚠	CX225NL6F	CAP CLASS X 0.22UF 250V 20%	C1
⚠	CX225NL6F	CAP CLASS X 0.22UF 250V 20%	C2
⚠	CY223NL6	CAP CLASS Y 2n2 250V 20%	C3
⚠	CY223NL6	CAP CLASS Y 2n2 250V 20%	C4
	CA228QL2	CAP A/ELEC 220uF 385V 20%	C5
	CM105NK66	CAP MET/POLY 100NF 250V 10%	C6
⚠	CY473NL6	CAP CLASS Y 4700pF 250V 20%	C7
	CA108FM7	CAP A/ELEC 100uF 25V -20%+50%	C8
	CM3358K84	CAP MET/POLY 0.33UF 63V 10%	C10
	CJS103JKSLCA	CAP CER M/L 1NF 50V 10%	C11
	CD472ZK7	CAP CER/DISC 470PF 3KV 10%	C12
	CA107JL7H	CAP A/ELEC 10uF 50V 20% 105DEG	C13
	CK223JK0	CAP CER/TUB 2n2 50V 10%	C14
	CK103JK0	CAP CER/TUB 1nF 50V 10%	C15
	CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C16
	CK103JK0	CAP CER/TUB 1nF 50V 10%	C17
	CD472YL6	CAP CER/DISC 470pF 2KV 10%	C18
	CA477NM7	CAP A/ELEC 47uF 250V -20%+50%	C20
	CA477NM7	CAP A/ELEC 47uF 250V -20%+50%	C21
	CA478HM7	CAP A/ELEC 470uF 35V -20%+50%	C22
	CA109FL9H	CAP A/ELEC 1000UF 25V 105D	C23
	CA109FL9H	CAP A/ELEC 1000UF 25V 105D	C24
	CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C25
	CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C26
	CK103JK0	CAP CER/TUB 1nF 50V 10%	C27
	CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C28
	CA2268L7	CAP A/ELEC 2u2F 63V 20%	C31
	CJS104JKSLCA	CAP 10N 50V 10% 0805	C32
	CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C33
	CJS103JKSLCA	CAP CER M/L 1NF 50V 10%	C34
	CA109FL9H	CAP A/ELEC 1000UF 25V 105D	C35
	CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C37
	CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C38
⚠	CY223NL6	CAP CLASS Y 2n2 250V 20%	C39
	CJS471JJSBCA	CAP CER M/L 47P 50V 5%	C40
	CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C42

DRIVE/DEFLECTION PCB COMPONENTS LIST

COMPONENT	DESCRIPTION	IDENT
CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C43
CM224NK64	CAP.MET/POLY 22NF 250V 10%	C44
CA108FM7	CAP A/ELEC 100uF 25V -20%+50%	C102
CL103RH0	CAP POLY/P 1nF 400V 1%	C103
CA107JL7H	CAP A/ELEC 10uF 50V 20% 105DEG	C104
CJS152JJSBCA	CAP CER M/L 150PF 50V 5%	C105
CL103RH0	CAP POLY/P 1nF 400V 1%	C106
CA108FM7	CAP A/ELEC 100uF 25V -20%+50%	C107
CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C108
CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C109
CK472JK0	CAP CER/TUB 470pF 50V 10%	C110
CJS471JJSBCA	CAP CER M/L 47P 50V 5%	C111
CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C112
CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C113
CA107JL7H	CAP A/ELEC 10uF 50V 20% 105DEG	C114
CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C115
CJS104JKSLCA	CAP 10N 50V 10% 0805	C118
CM105NK66	CAP MET/POLY 100NF 250V 10%	C120
CJS471JJSBCA	CAP CER M/L 47P 50V 5%	C121
CA108FM7	CAP A/ELEC 100uF 25V -20%+50%	C122
CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C124
CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C125
CA107JL7H	CAP A/ELEC 10uF 50V 20% 105DEG	C126
CA477NM7	CAP A/ELEC 47uF 250V -20%+50%	C201
⚠ CL393XJ67	CAP POLY/P 3n9 1600V 5%RAD	C202
⚠ CL335NK6	CAP POLY/P 0.33uF 250V 10%	C203
CD472SK7	CAP CER/DISC 470pF 500V 10%	C204
⚠ CL825NJ68	CAP POLY/P 820NF 250V 5%	C205
CM1058K84	CAP MET/POLY 0.1UF 63V 10%	C206
CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C207
⚠ CL335NK6	CAP POLY/P 0.33uF 250V 10%	C208
CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C210
CL105TJ68	CAP POLY/PROP 100NF 630V 5%	C211
CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C212
CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C213
CL103RH0	CAP POLY/P 1nF 400V 1%	C214
CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C215
CA478HM7	CAP A/ELEC 470uF 35V -20%+50%	C216

DRIVE/DEFLECTION PCB COMPONENTS LIST

	COMPONENT	DESCRIPTION	IDENT
	CM105KK65	CAP MET/POLY 100NF 100V 7.5MM	C217
	CM1058K84	CAP MET/POLY 0.1UF 63V 10%	C218
	CM224RK66	CAP MET/POLY 22NF 400V 10%	C220
	CA107JL7H	CAP A/ELEC 10uF 50V 20% 105DEG	C221
	CJS222JJSBCA	CAP CER M/L 220P 50V 5%	C222
	CC152KID4	CAP CER/PL 150pF 100V 2%	C223
	CA476ML7	CAP A/ELEC 4.7uF 160V 20%	C224
	CA107JL7H	CAP A/ELEC 10uF 50V 20% 105DEG	C225
	CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C226
	CD471YL7D	CAP CER/DISC 47pF 2KV 20%	C227
	CD472YL6	CAP CER/DISC 470pF 2KV 10%	C230
	CA108FM7	CAP A/ELEC 100uF 25V -20%+50%	C231
	CA107JL7H	CAP A/ELEC 10uF 50V 20% 105DEG	C232
	CK105FP0	CAP CER/TUB .1uF 25V-20+80%	C234
	CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C300
	CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C301
	CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C302
	CA478HM7	CAP A/ELEC 470uF 35V -20%+50%	C303
	CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C304
	CA1088L7	CAP A/ELEC 100uF 63V 20%	C305
	CK471JJ0	CAP CER/TUB 47pF 50V 5%	C306
	CM104RK75	CAP MET/POLY 10NF 400V 10%	C307
	CJS152JJSBCA	CAP CER M/L 150PF 50V 5%	C319
	CM4748K84	CAP MET/POLY 47NF.63V 10%	C401
	CA2268L7	CAP A/ELEC 2u2F 63V 20%	C402
	CM1058K84	CAP MET/POLY 0.1UF 63V 10%	C403
	CM3358K84	CAP MET/POLY 0.33UF 63V 10%	C404
	CM105KK65	CAP MET/POLY 100NF 100V 7.5MM	C405
⚠	CL513YJ6	CAP POLY/P 5n1 2KV 5%	C406
	CM105NK66	CAP MET/POLY 100NF 250V 10%	C407
	Z#0413	LOCTITE SUPERFLEX	C407
	CM105NK66	CAP MET/POLY 100NF 250V 10%	C408
	CM104RK75	CAP MET/POLY 10NF 400V 10%	C410
	CM104RK75	CAP MET/POLY 10NF 400V 10%	C411
⚠	CL156NJ6	CAP POLY/P 1u5 250V 5%	C412
	CM225KK66	CAP MET/POLY 220NF 100V 10%	C414
	CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C601
	CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C602

DRIVE/DEFLECTION PCB COMPONENTS LIST

COMPONENT	DESCRIPTION	IDENT
CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C603
CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C604
CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C605
CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C606
CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C607
CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C608
CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C609
CJS471JJSBCA	CAP CER M/L 47P 50V 5%	C610
CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C611
CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C612
CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C613
CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C614
CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C615
CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C616
CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C617
CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C618
CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C619
CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C620
CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C621
CJS103JKSLCA	CAP CER M/L 1NF 50V 10%	C622
CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C623
CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C624
CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C625
CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C626
CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C627
CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C628
CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C629
CJS471JJSBCA	CAP CER M/L 47P 50V 5%	C630
CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C631
CD471YL7D	CAP CER/DISC 47pF 2KV 20%	C632
CD471YL7D	CAP CER/DISC 47pF 2KV 20%	C633
CJS471JJSBCA	CAP CER M/L 47P 50V 5%	C634
CJS471JJSBCA	CAP CER M/L 47P 50V 5%	C635
CJS471JJSBCA	CAP CER M/L 47P 50V 5%	C636
CA107JL7H	CAP A/ELEC 10uF 50V 20% 105DEG	C637
CA107JL7H	CAP A/ELEC 10uF 50V 20% 105DEG	C638
CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C639
CJS471JJSBCA	CAP CER M/L 47P 50V 5%	C640

DRIVE/DEFLECTION PCB COMPONENTS LIST

COMPONENT	DESCRIPTION	IDENT
CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C641
CA108FM7	CAP A/ELEC 100uF 25V -20%+50%	C642
CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C643
CA107JL7H	CAP A/ELEC 10uF 50V 20% 105DEG	C644
CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C645
CJS103JKSLCA	CAP CER M/L 1NF 50V 10%	C646
CA228FM7	CAP A/ELEC 220uF 25V -20%+50%	C647
CM1058K84	CAP MET/POLY 0.1UF 63V 10%	C648
CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C649
CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C650
CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C651
CM1058K84	CAP MET/POLY 0.1UF 63V 10%	C652
CJS223JKSLCA	CAP 2N2 X7R 10% 50V 0805	C653
CJS475EPSSCA	CAP 470NF Y5V 16V 0805	C654
CQS104EISECA	CAP 10NF 16V SUR MNT.PPS 0805	C655
CJS104JKSLCA	CAP 10N 50V 10% 0805	C656
CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C657
CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C658
CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C659
CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C660
CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C661
CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C663
CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C664
CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C665
CJS471JJSBCA	CAP CER M/L 47P 50V 5%	C667
CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C670
CJS223JKSLCA	CAP 2N2 X7R 10% 50V 0805	C671
CM1038K84	CAP M/POLY 1NF 63V 10% TAPED	C672 5MM PITCH
CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C673
CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C674
CJS104JKSLCA	CAP 10N 50V 10% 0805	C675
CL104XJ6	CAP POLY/P 10NF 1500V 5%	C1002
CL476MJ69	CAP POLY/P 4.7UF 160V 5%	C1003

DIODES

DP5398UU0	DIODE RECT 800V 1.5A	D1
DP5398UU0	DIODE RECT 800V 1.5A	D2
DP5398UU0	DIODE RECT 800V 1.5A	D3

DRIVE/DEFLECTION PCB COMPONENTS LIST

COMPONENT	DESCRIPTION	IDENT
DP5398UU0	DIODE RECT 800V 1.5A	D4
DF0096UU0	DIODE FAST RECOVERY BYV96E	D5
DF0159UU0	DIODE BA159	D6
DF0159UU0	DIODE BA159	D7
DZ79151FC0	DIODE ZENER 15V	D8
DP4007UU0	DIODE IN4007 UNIVERSAL PT. NO.	D10
DF0159UU0	DIODE BA159	D12
DF0480DU0	DIODE FAST RECOVERY MUR480	D13
DF0159UU0	DIODE BA159	D14
DF0480DU0	DIODE FAST RECOVERY MUR480	D15
DF0027NU0	DIODE FAST RECOVERY BYV27-200	D16
Z#0001	COMPOUND HEATSINK	D17
DF0150UU0	DIODE FAST RECOVERY BYW29-150	D17 FIT WITH FERRITE BEAD
DF0027NU0	DIODE FAST RECOVERY BYV27-200	D18
DP4007UU0	DIODE IN4007 UNIVERSAL PT. NO.	D20
DSS4448MUSEB	DIODE 4448 100MA 50V	D21
DSS4448MUSEB	DIODE 4448 100MA 50V	D22
DS4148UU0	DIODE 1N4148	D23
DF0027NU0	DIODE FAST RECOVERY BYV27-200	D24
DS4148UU0	DIODE 1N4148	D28
DZ79510FB0	DIODE ZENER BZX79B5V1 2%	D30
DZS84751CCUS	DIODE ZENER BZX84C7V5 5%	D31
DS4148UU0	DIODE 1N4148	D32
DZ79560FB0	DIODE ZENER BZX79B5V6 2%	D33
DP4007UU0	DIODE IN4007 UNIVERSAL PT. NO.	D34
DSS4448MUSEB	DIODE 4448 100MA 50V	D35
Z#0457	WIRE TINNED COPPER 24SWG	D100
DF0027NU0	DIODE FAST RECOVERY BYV27-200	D101 FIT WITH FERRITE BEAD
DF0027NU0	DIODE FAST RECOVERY BYV27-200	D102
DZS84751CCUS	DIODE ZENER BZX84C7V5 5%	D103
DF0159UU0	DIODE BA159	D104
DF0159UU0	DIODE BA159	D105
DS0020UU0	DIODE BAV20 UNIVERSAL	D106
DSS4448MUSEB	DIODE 4448 100MA 50V	D107
DSS4448MUSEB	DIODE 4448 100MA 50V	D108
DSS4448MUSEB	DIODE 4448 100MA 50V	D111
DSS4448MUSEB	DIODE 4448 100MA 50V	D112

DRIVE/DEFLECTION PCB COMPONENTS LIST

COMPONENT	DESCRIPTION	IDENT
DS4148UU0	DIODE 1N4148	D113
DSS4448MUSEB	DIODE 4448 100MA 50V	D122
DSS4448MUSEB	DIODE 4448 100MA 50V	D123
DF0159UU0	DIODE BA159	D201
DZ79151FC0	DIODE ZENER 15V	D202
DS0020UU0	DIODE BAV20 UNIVERSAL	D203
DZ79151FC0	DIODE ZENER 15V	D204
DS0020UU0	DIODE BAV20 UNIVERSAL	D205
DZ79151FC0	DIODE ZENER 15V	D206
DS0020UU0	DIODE BAV20 UNIVERSAL	D207
DF0584KU0	DIODE BY584	D208
DF0027NU0	DIODE FAST RECOVERY BYV27-200	D210
DZ79750FB0	DIODE ZENER BZX79B7V5 2%	D211
DF0027NU0	DIODE FAST RECOVERY BYV27-200	D212
DF3215PU0	DIODE FAST RECOVERY DTV32-1500	D213
DSS4448MUSEB	DIODE 4448 100MA 50V	D215
DSS4448MUSEB	DIODE 4448 100MA 50V	D216
DSS4448MUSEB	DIODE 4448 100MA 50V	D218
DS0020UU0	DIODE BAV20 UNIVERSAL	D220
DZ79620FB0	DIODE ZENER BZX79B6V2 2%	D221
DF0027NU0	DIODE FAST RECOVERY BYV27-200	D222
DF0027NU0	DIODE FAST RECOVERY BYV27-200	D223
DF0159UU0	DIODE BA159	D301
DF0159UU0	DIODE BA159	D400
DS4148UU0	DIODE 1N4148	D401
DS4148UU0	DIODE 1N4148	D403
DSS4448MUSEB	DIODE 4448 100MA 50V	D404
DF0159UU0	DIODE BA159	D405
DS0020UU0	DIODE BAV20 UNIVERSAL	D406
DZ79151FC0	DIODE ZENER 15V	D407
DF0027NU0	DIODE FAST RECOVERY BYV27-200	D408 FIT WITH FERRITE BEAD
DF0159UU0	DIODE BA159	D410
DF0159UU0	DIODE BA159	D411
DSS4448MUSEB	DIODE 4448 100MA 50V	D412
DSS4448MUSEB	DIODE 4448 100MA 50V	D414
DSS4448MUSEB	DIODE 4448 100MA 50V	D603
DSS4448MUSEB	DIODE 4448 100MA 50V	D604

DRIVE/DEFLECTION PCB COMPONENTS LIST

COMPONENT	DESCRIPTION	IDENT
DSS4448MUSEB	DIODE 4448 100MA 50V	D605
DS4148UU0	DIODE 1N4148	D606
DS4148UU0	DIODE 1N4148	D607
DZS84511CCUS	DIODE ZENER BZX84C5V1 5%	D608
DZ79330FB0	DIODE ZENER BZX79B3V3 2%	D609
DSS4448MUSEB	DIODE 4448 100MA 50V	D610
DS4148UU0	DIODE 1N4148	D611
DZ79510FB0	DIODE ZENER BZX79B5V1 2%	D612
DSS4448MUSEB	DIODE 4448 100MA 50V	D613
DSS4448MUSEB	DIODE 4448 100MA 50V	D614
DSS4448MUSEB	DIODE 4448 100MA 50V	D615
DS4148UU0	DIODE 1N4148	D616
DS4148UU0	DIODE 1N4148	D617
DSS4448MUSEB	DIODE 4448 100MA 50V	D618
DSS4448MUSEB	DIODE 4448 100MA 50V	D620
DSS4448MUSEB	DIODE 4448 100MA 50V	D621
DZ79750FB0	DIODE ZENER BZX79B7V5 2%	D800
DZ79620FB0	DIODE ZENER BZX79B6V2 2%	D801
DS0020UU0	DIODE BAV20 UNIVERSAL	D802
DS4148UU0	DIODE 1N4148	D819
DS4148UU0	DIODE 1N4148	D827
DP4007UU0	DIODE IN4007 UNIVERSAL PT. NO.	D1003
VN0002TU0	LED TRICOLOUR	D1101
FUSES		
⚠ KA3151BAH	FUSE 5 X 20MM T3.15AH HRC	F1
KS0005Y01	FUSEHOLDER PTF/15	F1
⚠ KA3151AAU	FUSE 3.15A TIME LAG RADIAL	F2
INTEGRATED CIRCUITS		
IW3842UU0	CIRCUIT INT. UC3842	IC1 ADJACENT TO D8
IV0340UU3	CIRCUIT INT. LM340T12 +12V. 1A	IC2
Z#0001	COMPOUND HEATSINK	IC2
IC0393UU2	CIRCUIT INT CM0S 393 DUAL COMP	IC3
IL35800U2	CIRCUIT INT.LM358 PLASTIC DIL.	IC101
IC7555UP2	CIRCUIT INT. ICM7555CN	IC102
IL0393NU2	CIRCUIT INT. LM393N 8 PIN DIL.	IC103
IL0393NU2	CIRCUIT INT. LM393N 8 PIN DIL.	IC201

DRIVE/DEFLECTION PCB COMPONENTS LIST

COMPONENT	DESCRIPTION	IDENT
IC7555UP2	CIRCUIT INT. ICM7555CN	IC202
IL83510U2	CIRCUIT INT. TDA8351	IC301
IV0317PU3	VOLTAGE REGULATOR LM317 T0220	IC302
Z#0001	COMPOUND HEATSINK	IC302
KS0056Y56	56 WAY IC SOCKET	IC601
IM72715CS7	MICROCONTROLLER ST7271N5B1	IC601 PROG TO V1G1
IL13600U2	DUAL MULIPLIER LM13600	IC602
IL13600U2	DUAL MULIPLIER LM13600	IC603
IM9424UU2	CIRCUIT INT STV9424	IC605
IC0374UU2	CIRCUIT INT.TS374CN QUAD COMP	IC606
IL0393NU2	CIRCUIT INT. LM393N 8 PIN DIL.	IC607
IL0324NU2	CIRCUIT INT.LM324N QUAD OP AMP	IC608
IL48510U2	CIRCUIT INT. TDA 4851	IC609
IV7805LU0	CIRCUIT INT. 78L05	IC611
INDUCTORS/CHOKES		
⚠ LM0006UA1	CHOKE FILTER ELF450J	L1
LW824SK1	CHOKE 82UH 10%	L2
WL2210TU2	WIRE LINK 7MM X10MM X 7MM	L3 FIT WITH FERRITE BEAD
WL2210TU2	WIRE LINK 7MM X10MM X 7MM	L4 FIT WITH FERRITE BEAD
Z#0457	WIRE TINNED COPPER 24SWG	L5
LW104SK1	CHOKE 10uH B78108-S1103-X	L6
WL2215TU2	WIRE LINK 7X15X7	L7 FIT WITH FERRITE BEAD
Z#0457	WIRE TINNED COPPER 24SWG	L201
L03184I01	COIL LINEARITY - SER.14	L202
LW106SK1	CHOKE 1mH 10%	L203
LW106SK1	CHOKE 1mH 10%	L204
T03169I01	CHOKE B+ SERIES 14	L400
LW565SK1	CHOKE 560uH RINGING FILTER	L401
LW104SK1	CHOKE 10uH B78108-S1103-X	L800
Z#0457	WIRE TINNED COPPER 24SWG	L801
Z#0457	WIRE TINNED COPPER 24SWG	L802
Z#0457	WIRE TINNED COPPER 24SWG	L803
Z#0457	WIRE TINNED COPPER 24SWG	L810

DRIVE/DEFLECTION PCB COMPONENTS LIST

COMPONENT	DESCRIPTION	IDENT
LINKS		
Z#0457	WIRE TINNED COPPER 24SWG	LK1
Z#0457	WIRE TINNED COPPER 24SWG	LK2
Z#0457	WIRE TINNED COPPER 24SWG	LK3
Z#0457	WIRE TINNED COPPER 24SWG	LK4
Z#0457	WIRE TINNED COPPER 24SWG	LK5
Z#0457	WIRE TINNED COPPER 24SWG	LK6
Z#0457	WIRE TINNED COPPER 24SWG	LK7
Z#0457	WIRE TINNED COPPER 24SWG	LK8
Z#0457	WIRE TINNED COPPER 24SWG	LK9
Z#0457	WIRE TINNED COPPER 24SWG	LK10
Z#0457	WIRE TINNED COPPER 24SWG	LK11
Z#0457	WIRE TINNED COPPER 24SWG	LK12
Z#0457	WIRE TINNED COPPER 24SWG	LK13
Z#0457	WIRE TINNED COPPER 24SWG	LK14
Z#0457	WIRE TINNED COPPER 24SWG	LK15
Z#0457	WIRE TINNED COPPER 24SWG	LK18
Z#0457	WIRE TINNED COPPER 24SWG	LK19
Z#0457	WIRE TINNED COPPER 24SWG	LK20
Z#0457	WIRE TINNED COPPER 24SWG	LK21
Z#0457	WIRE TINNED COPPER 24SWG	LK22
Z#0457	WIRE TINNED COPPER 24SWG	LK23
Z#0457	WIRE TINNED COPPER 24SWG	LK24
Z#0457	WIRE TINNED COPPER 24SWG	LK25
Z#0457	WIRE TINNED COPPER 24SWG	LK26
Z#0457	WIRE TINNED COPPER 24SWG	LK27
Z#0457	WIRE TINNED COPPER 24SWG	LK28
Z#0457	WIRE TINNED COPPER 24SWG	LK29
Z#0457	WIRE TINNED COPPER 24SWG	LK30
Z#0457	WIRE TINNED COPPER 24SWG	LK31
Z#0457	WIRE TINNED COPPER 24SWG	LK32
Z#0457	WIRE TINNED COPPER 24SWG	LK33
Z#0457	WIRE TINNED COPPER 24SWG	LK34
Z#0457	WIRE TINNED COPPER 24SWG	LK35
Z#0457	WIRE TINNED COPPER 24SWG	LK36
Z#0457	WIRE TINNED COPPER 24SWG	LK37
Z#0457	WIRE TINNED COPPER 24SWG	LK38
Z#0457	WIRE TINNED COPPER 24SWG	LK39

DRIVE/DEFLECTION PCB COMPONENTS LIST

COMPONENT	DESCRIPTION	IDENT
Z#0457	WIRE TINNED COPPER 24SWG	LK40
Z#0457	WIRE TINNED COPPER 24SWG	LK41
Z#0457	WIRE TINNED COPPER 24SWG	LK42
Z#0457	WIRE TINNED COPPER 24SWG	LK43
Z#0457	WIRE TINNED COPPER 24SWG	LK44
Z#0457	WIRE TINNED COPPER 24SWG	LK45
Z#0457	WIRE TINNED COPPER 24SWG	LK46
Z#0457	WIRE TINNED COPPER 24SWG	LK47
Z#0457	WIRE TINNED COPPER 24SWG	LK48
Z#0457	WIRE TINNED COPPER 24SWG	LK49
Z#0457	WIRE TINNED COPPER 24SWG	LK50
Z#0457	WIRE TINNED COPPER 24SWG	LK51
Z#0457	WIRE TINNED COPPER 24SWG	LK52
Z#0457	WIRE TINNED COPPER 24SWG	LK53
Z#0457	WIRE TINNED COPPER 24SWG	LK54
Z#0457	WIRE TINNED COPPER 24SWG	LK55
Z#0457	WIRE TINNED COPPER 24SWG	LK56
Z#0457	WIRE TINNED COPPER 24SWG	LK57
Z#0457	WIRE TINNED COPPER 24SWG	LK58
A05866I01	RFI EARTH LEAD HARNESS ASSY	LK59
Z#0457	WIRE TINNED COPPER 24SWG	LK60
Z#0457	WIRE TINNED COPPER 24SWG	LK62
Z#0457	WIRE TINNED COPPER 24SWG	LK63
Z#0457	WIRE TINNED COPPER 24SWG	LK64
Z#0457	WIRE TINNED COPPER 24SWG	LK65
Z#0457	WIRE TINNED COPPER 24SWG	LK66
Z#0457	WIRE TINNED COPPER 24SWG	LK67
Z#0457	WIRE TINNED COPPER 24SWG	LK68
Z#0457	WIRE TINNED COPPER 24SWG	LK69
Z#0457	WIRE TINNED COPPER 24SWG	LK70
Z#0457	WIRE TINNED COPPER 24SWG	LK71
Z#0457	WIRE TINNED COPPER 24SWG	LK72
Z#0457	WIRE TINNED COPPER 24SWG	LK73
Z#0457	WIRE TINNED COPPER 24SWG	LK74
Z#0457	WIRE TINNED COPPER 24SWG	LK75
Z#0457	WIRE TINNED COPPER 24SWG	LK76
Z#0457	WIRE TINNED COPPER 24SWG	LK77
Z#0457	WIRE TINNED COPPER 24SWG	LK78

DRIVE/DEFLECTION PCB COMPONENTS LIST

COMPONENT	DESCRIPTION	IDENT
Z#0457	WIRE TINNED COPPER 24SWG	LK79
Z#0457	WIRE TINNED COPPER 24SWG	LK80
Z#0457	WIRE TINNED COPPER 24SWG	LK81
Z#0457	WIRE TINNED COPPER 24SWG	LK82
Z#0457	WIRE TINNED COPPER 24SWG	LK83
Z#0457	WIRE TINNED COPPER 24SWG	LK84
Z#0457	WIRE TINNED COPPER 24SWG	LK85
Z#0457	WIRE TINNED COPPER 24SWG	LK86
RF223DJ0	RESISTOR C/FILM 2K2 1/4W 5%	LK87
Z#0457	WIRE TINNED COPPER 24SWG	LK88
Z#0457	WIRE TINNED COPPER 24SWG	LK89
Z#0457	WIRE TINNED COPPER 24SWG	LK90
Z#0457	WIRE TINNED COPPER 24SWG	LK91
Z#0457	WIRE TINNED COPPER 24SWG	LK92
Z#0457	WIRE TINNED COPPER 24SWG	LK93
Z#0457	WIRE TINNED COPPER 24SWG	LK94
Z#0457	WIRE TINNED COPPER 24SWG	LK95
Z#0457	WIRE TINNED COPPER 24SWG	LK96
Z#0457	WIRE TINNED COPPER 24SWG	LK97
Z#0457	WIRE TINNED COPPER 24SWG	LK98
Z#0457	WIRE TINNED COPPER 24SWG	LK99
Z#0457	WIRE TINNED COPPER 24SWG	LK100
Z#0457	WIRE TINNED COPPER 24SWG	LK101
Z#0457	WIRE TINNED COPPER 24SWG	LK102
Z#0457	WIRE TINNED COPPER 24SWG	LK103
Z#0457	WIRE TINNED COPPER 24SWG	LK104
Z#0457	WIRE TINNED COPPER 24SWG	LK105
Z#0457	WIRE TINNED COPPER 24SWG	LK106
Z#0457	WIRE TINNED COPPER 24SWG	LK107
Z#0457	WIRE TINNED COPPER 24SWG	LK108
Z#0457	WIRE TINNED COPPER 24SWG	LK109
LW824SK1	CHOKE 82UH 10%	LK110
Z#0457	WIRE TINNED COPPER 24SWG	LK111
Z#0457	WIRE TINNED COPPER 24SWG	LK112
Z#0457	WIRE TINNED COPPER 24SWG	LK113
Z#0457	WIRE TINNED COPPER 24SWG	LK115
Z#0457	WIRE TINNED COPPER 24SWG	LK117
Z#0457	WIRE TINNED COPPER 24SWG	LK118

DRIVE/DEFLECTION PCB COMPONENTS LIST

COMPONENT	DESCRIPTION	IDENT
Z#0457	WIRE TINNED COPPER 24SWG	LK119
Z#0457	WIRE TINNED COPPER 24SWG	LK120
Z#0457	WIRE TINNED COPPER 24SWG	LK121
WL2210TU2	WIRE LINK 7MM X10MM X 7MM	LK122 FIT WITH FERRITE BEAD
Z#0457	WIRE TINNED COPPER 24SWG	LK123
WL2210TU2	WIRE LINK 7MM X10MM X 7MM	LK124 FIT WITH FERRITE BEAD
Z#0457	WIRE TINNED COPPER 24SWG	LK125
Z#0457	WIRE TINNED COPPER 24SWG	LK126
Z#0457	WIRE TINNED COPPER 24SWG	LK127
Z#0457	WIRE TINNED COPPER 24SWG	LK128
WL2210TU1	LINK WIRE - SIZE 5MM+10MM+5MM	LK129
Z#0457	WIRE TINNED COPPER 24SWG	LK130
Z#0457	WIRE TINNED COPPER 24SWG	LK131
Z#0457	WIRE TINNED COPPER 24SWG	LK132
Z#0457	WIRE TINNED COPPER 24SWG	LK133
Z#0457	WIRE TINNED COPPER 24SWG	LK134
Z#0457	WIRE TINNED COPPER 24SWG	LK136
Z#0457	WIRE TINNED COPPER 24SWG	LK137
Z#0457	WIRE TINNED COPPER 24SWG	LK138
RF151DJ0	RESISTOR C/FILM 15R 1/4W 5%	LK139
WL2212TU2	WIRE LINK 7MM X 12MM X 7MM	LK140
Z#0413	LOCTITE SUPERFLEX	LK140
WL2212TU1	LINK WIRE 5MM+12MM+5MM	LK142
WL2212TU1	LINK WIRE 5MM+12MM+5MM	LK143
Z#0457	WIRE TINNED COPPER 24SWG	LK145
Z#0457	WIRE TINNED COPPER 24SWG	LK146
Z#0457	WIRE TINNED COPPER 24SWG	LK149
Z#0457	WIRE TINNED COPPER 24SWG	LK152
Z#0457	WIRE TINNED COPPER 24SWG	LK153
Z#0457	WIRE TINNED COPPER 24SWG	LK154
WL6300TU1	ZEROHM SHORT CIRCUIT LINK	LK155
WL2210TU2	WIRE LINK 7MM X10MM X 7MM	LK156 FIT WITH FERRITE BEAD
Z#0457	WIRE TINNED COPPER 24SWG	LK158
Z#0457	WIRE TINNED COPPER 24SWG	LK161
Z#0457	WIRE TINNED COPPER 24SWG	LK162
Z#0457	WIRE TINNED COPPER 24SWG	LK164

DRIVE/DEFLECTION PCB COMPONENTS LIST

COMPONENT	DESCRIPTION	IDENT
Z#0457	WIRE TINNED COPPER 24SWG	LK167
WL2215TU1	WIRE LINK 5mm X 15mm X 5mm	LK168
Z#0457	WIRE TINNED COPPER 24SWG	LK169
Z#0457	WIRE TINNED COPPER 24SWG	LK171
Z#0457	WIRE TINNED COPPER 24SWG	LK173
Z#0457	WIRE TINNED COPPER 24SWG	LK174
Z#0457	WIRE TINNED COPPER 24SWG	LK175
Z#0457	WIRE TINNED COPPER 24SWG	LK176
Z#0457	WIRE TINNED COPPER 24SWG	LK178
Z#0457	WIRE TINNED COPPER 24SWG	LK179
Z#0457	WIRE TINNED COPPER 24SWG	LK181
Z#0457	WIRE TINNED COPPER 24SWG	LK182
Z#0457	WIRE TINNED COPPER 24SWG	LK183
Z#0457	WIRE TINNED COPPER 24SWG	LK185
Z#0457	WIRE TINNED COPPER 24SWG	LK216
Z#0457	WIRE TINNED COPPER 24SWG	LK801
Z#0457	WIRE TINNED COPPER 24SWG	LK803
Z#0457	WIRE TINNED COPPER 24SWG	LK804
Z#0457	WIRE TINNED COPPER 24SWG	LK805
Z#0457	WIRE TINNED COPPER 24SWG	LK806
Z#0457	WIRE TINNED COPPER 24SWG	LK807
Z#0457	WIRE TINNED COPPER 24SWG	LK809
Z#0457	WIRE TINNED COPPER 24SWG	LK810
Z#0457	WIRE TINNED COPPER 24SWG	LK811
Z#0457	WIRE TINNED COPPER 24SWG	LK812
Z#0457	WIRE TINNED COPPER 24SWG	LK813
Z#0457	WIRE TINNED COPPER 24SWG	LK816
Z#0457	WIRE TINNED COPPER 24SWG	LK818
Z#0457	WIRE TINNED COPPER 24SWG	LK819
Z#0457	WIRE TINNED COPPER 24SWG	LK820
Z#0457	WIRE TINNED COPPER 24SWG	LK821
Z#0457	WIRE TINNED COPPER 24SWG	LK822
Z#0457	WIRE TINNED COPPER 24SWG	LK823
Z#0457	WIRE TINNED COPPER 24SWG	LK824
Z#0457	WIRE TINNED COPPER 24SWG	LK825
Z#0457	WIRE TINNED COPPER 24SWG	LK827
Z#0457	WIRE TINNED COPPER 24SWG	LK828
Z#0457	WIRE TINNED COPPER 24SWG	LK829

DRIVE/DEFLECTION PCB COMPONENTS LIST

COMPONENT	DESCRIPTION	IDENT
Z#0457	WIRE TINNED COPPER 24SWG	LK830
Z#0457	WIRE TINNED COPPER 24SWG	LK831
Z#0457	WIRE TINNED COPPER 24SWG	LK832
Z#0457	WIRE TINNED COPPER 24SWG	LK833
Z#0457	WIRE TINNED COPPER 24SWG	LK834
Z#0457	WIRE TINNED COPPER 24SWG	LK835
Z#0457	WIRE TINNED COPPER 24SWG	LK836
Z#0457	WIRE TINNED COPPER 24SWG	LK837
Z#0457	WIRE TINNED COPPER 24SWG	LK838

PLUGS

COMPONENT	DESCRIPTION	IDENT
KP0B3PH06	PLUG 6 WAY WITH PINS 2,4 & 5	PL1
KP0320D03	PLUG 3 PIN 320/3763 0.3"+0.2"	PL2
WL2208TU1	LINK WIRE 5MM X 8MM X 5MM	PL3
WL2210TU1	LINK WIRE - SIZE 5MM+10MM+5MM	PL3
KP0004A04	PLUG 4 WAY	PL9
KP0B4PY04	PLUG 4 WAY PCB B4P-LV-TN JST	PL201
KP0005A05	PLUG 5 WAY JST TYPE B5-EH-A	PL604
KP0005U05	PLUG SIDE ENTRY 2.5MM MTG	PL1101
WA0655A01	DEGAUSS PCB TO OSD PCB	PL1103 TO PL1106

RESISTORS

COMPONENT	DESCRIPTION	IDENT
RW220VJ8	RESISTOR W/W 2R2 7W 5%	R1
⚠ RG335GJ0	RES.M/GLAZE 330K 1/2W 5%	R2
RM224II0	RESISTOR M/FILM 22K 0.75W 2%	R4A
RM224II0	RESISTOR M/FILM 22K 0.75W 2%	R4B PREFORM OFF PCB
R0154LJ0	RESISTOR M/OXIDE 15K 2W 5%	R5
R0154LJ0	RESISTOR M/OXIDE 15K 2W 5%	R6
RM153DH0	RESISTOR M/FILM 1K5 1/4W 1%	R7
RF330DJ0	RESISTOR C/FILM 3R3 1/4W 5%	R12
RM1694DH0	RESISTOR M/FILM 16K9 1/4W 1%	R13
RMS155CISFA	RES METAL FILM 150K 0.1W 1206	R14
⚠ RL101DJ0	RES.FUS M/F 10R 1/4W 5%	R15
RMS223AISCA	RES METAL FILM 2K2 0.1W 2%	R16
RF331DJ0	RESISTOR C/FILM 33R 1/4W 5%	R17
RMS103AISCA	RES METAL FILM 1K.0.1W 2%	R18
RW472PJ5	RESISTOR W/W POWER 470R 5% 4W	R20
RMS473AISCA	RES METAL FILM 4K7 0.1W 2%	R21

DRIVE/DEFLECTION PCB COMPONENTS LIST

COMPONENT	DESCRIPTION	IDENT
RMS103AISCA	RES METAL FILM 1K.0.1W 2%	R22
RMS684AISCA	RES METAL FILM 68K 0.1W 2%	R23
RF472DJ0	RESISTOR C/FILM 470R 1/4W 5%	R24
RMS472AISCA	RES METAL FILM 470R 0.1W 2%	R25
RM150II0	RESISTOR M/FILM 1R5 0.75W 2%	R25A
RM150II0	RESISTOR M/FILM 1R5 0.75W 2%	R25B
RM150II0	RESISTOR M/FILM 1R5 0.75W 2%	R25C
RH335II0	RES M/F 330K 0.75W 2% HI VOL	R26
⚠ RL022IJ0	RES.FUS M/F 0R22 0.7W 5%	R27
⚠ RL015IJ0	RES.FUS M/F 0R15 0.7W 5%	R28
RMS155CISFA	RES METAL FILM 150K 0.1W 1206	R29
WL2215TU2	WIRE LINK 7X15X7	R30 FIT WITH FERRITE BEAD
RF151DJ0	RESISTOR C/FILM 15R 1/4W 5%	R31
RMS106CISFA	RES METAL FILM 1M0 200V 2%	R32
RMS105AISCA	RES METAL FILM 100K 0.1W 2%	R33
RMS105AISCA	RES METAL FILM 100K 0.1W 2%	R34
⚠ RL102DJ0	RES.FUS M/F 100R 1/4W 5%	R35
RF682DJ0	RESISTOR C/FILM 680R 1/4W 5%	R36
RMS474AISCA	RES METAL FILM 47K 0.1W 2%	R38
RMS474AISCA	RES METAL FILM 47K 0.1W 2%	R40
RF474DJ0	RESISTOR C/FILM 47K 1/4W 5%	R41
RMS103AISCA	RES METAL FILM 1K.0.1W 2%	R42
RMS104AISCA	RES METAL FILM 10K 0.1W 2%	R43
RMS223AISCA	RES METAL FILM 2K2 0.1W 2%	R44
⚠ RL022IJ0	RES.FUS M/F 0R22 0.7W 5%	R45
RF331DJ0	RESISTOR C/FILM 33R 1/4W 5%	R46
Z#0457	WIRE TINNED COPPER 24SWG	R47
RM335DH0	RESISTOR M/FILM 330K 1/4W 1%	R50
RM335DH0	RESISTOR M/FILM 330K 1/4W 1%	R51
RM335DH0	RESISTOR M/FILM 330K 1/4W 1%	R52
Z#0457	WIRE TINNED COPPER 24SWG	R55
RM180LJ0	RESISTOR M/F 1R8 2W	R56
RMS106CISFA	RES METAL FILM 1M0 200V 2%	R56
RM180LJ0	RESISTOR M/F 1R8 2W	R57
RMS104AISCA	RES METAL FILM 10K 0.1W 2%	R57
RMS104AISCA	RES METAL FILM 10K 0.1W 2%	R58
RMS474AISCA	RES METAL FILM 47K 0.1W 2%	R60

DRIVE/DEFLECTION PCB COMPONENTS LIST

COMPONENT	DESCRIPTION	IDENT
RF224DJ0	RESISTOR C/FILM 22K 1/4W 5%	R61
RM105DH0	RESISTOR M/FILM 100K 1/4W 1%	R62
RMS103AISCA	RES METAL FILM 1K.0.1W 2%	R63
RM335DH0	RESISTOR M/FILM 330K 1/4W 1%	R64
RM335DH0	RESISTOR M/FILM 330K 1/4W 1%	R65
RM335DH0	RESISTOR M/FILM 330K 1/4W 1%	R66
RM474DH0	RESISTOR M/FILM 47K 1/4W 1%	R67
RF103DJ0	RESISTOR C/FILM 1K0 1/4W 5%	R68
RMS102AISCA	RES METAL FILM 100R 0.1W 2%	R100
⚠ RL101DJ0	RES.FUS M/F 10R 1/4W 5%	R101
RM225DH0	RESISTOR M/FILM 220K 1/4W 1%	R102
RMS223AISCA	RES METAL FILM 2K2 0.1W 2%	R103
RMS474AISCA	RES METAL FILM 47K 0.1W 2%	R104
RM225DH0	RESISTOR M/FILM 220K 1/4W 1%	R105
⚠ RL101DJ0	RES.FUS M/F 10R 1/4W 5%	R106
RMS101AISCA	RES.METAL FILM 10R.0.1W.2%	R107
RMS473AISCA	RES METAL FILM 4K7 0.1W 2%	R108
RMS223AISCA	RES METAL FILM 2K2 0.1W 2%	R110
RMS472AISCA	RES METAL FILM 470R 0.1W 2%	R111
RF473DJ0	RESISTOR C/FILM 4K7 1/4W 5%	R112
RMS104AISCA	RES METAL FILM 10K 0.1W 2%	R113
⚠ RL101DJ0	RES.FUS M/F 10R 1/4W 5%	R114
RMS102AISCA	RES METAL FILM 100R 0.1W 2%	R116
RMS335CISFA	RES METAL FILM 330K 200V 2%	R117
RMS224AISCA	RES METAL FILM 22K 0.1W 2%	R118
RMS104AISCA	RES METAL FILM 10K 0.1W 2%	R121
RMS104AISCA	RES METAL FILM 10K 0.1W 2%	R122
RF104DJ0	RESISTOR C/FILM 10K 1/4W 5%	R124
RF104DJ0	RESISTOR C/FILM 10K 1/4W 5%	R125
RMS104AISCA	RES METAL FILM 10K 0.1W 2%	R126
RF102DJ0	RESISTOR C/FILM 100R 1/4W 5%	R128
⚠ RL101DJ0	RES.FUS M/F 10R 1/4W 5%	R130
RMS106CISFA	RES METAL FILM 1M0 200V 2%	R131
RMS331AISCA	RES METAL FILM 33R 0.1W 2%	R134
RMS104AISCA	RES METAL FILM 10K 0.1W 2%	R135
RMS104AISCA	RES METAL FILM 10K 0.1W 2%	R137
RMS331AISCA	RES METAL FILM 33R 0.1W 2%	R138
RMS104AISCA	RES METAL FILM 10K 0.1W 2%	R140

DRIVE/DEFLECTION PCB COMPONENTS LIST

COMPONENT	DESCRIPTION	IDENT
RMS473AISCA	RES METAL FILM 4K7 0.1W 2%	R141
RMS104AISCA	RES METAL FILM 10K 0.1W 2%	R142
RMS334AISCA	RES METAL FILM 33K 0.1W 2%	R143
RF103DJ0	RESISTOR C/FILM 1K0 1/4W 5%	R144
RMS473AISCA	RES METAL FILM 4K7 0.1W 2%	R145
RMS473AISCA	RES METAL FILM 4K7 0.1W 2%	R146
RW330LK8	RESISTOR W/W 3R3 2W VTM 290-1	R201
RM271II0	RESISTOR M/FILM 27R 0.75W 2%	R202
RMS155CISFA	RES METAL FILM 150K 0.1W 1206	R203
RMS155CISFA	RES METAL FILM 150K 0.1W 1206	R204
RM472II0	RESISTOR M/FILM 470R 0.75W	R205
RF474DJ0	RESISTOR C/FILM 47K 1/4W 5%	R206
RL332DJ0	RES M/FUS 330R .25W	R207
RMS155CISFA	RES METAL FILM 150K 0.1W 1206	R208
RMS155CISFA	RES METAL FILM 150K 0.1W 1206	R210
RF474DJ0	RESISTOR C/FILM 47K 1/4W 5%	R211
RMS155CISFA	RES METAL FILM 150K 0.1W 1206	R212
RMS155CISFA	RES METAL FILM 150K 0.1W 1206	R213
RF474DJ0	RESISTOR C/FILM 47K 1/4W 5%	R214
RF682DJ0	RESISTOR C/FILM 680R 1/4W 5%	R215
RF682DJ0	RESISTOR C/FILM 680R 1/4W 5%	R216
RF682DJ0	RESISTOR C/FILM 680R 1/4W 5%	R217
RF154DJ0	RESISTOR C/FILM 15K 1/4W 5%	R218
RMS473AISCA	RES METAL FILM 4K7 0.1W 2%	R220
⚠ RL470GJ0	RES.FUS M/F 4R7 1/2W 5%	R221
RF102DJ0	RESISTOR C/FILM 100R 1/4W 5%	R222
RF103DJ0	RESISTOR C/FILM 1K0 1/4W 5%	R223
RMS223AISCA	RES METAL FILM 2K2 0.1W 2%	R224
RMS333AISCA	RES METAL FILM 3K3 0.1W 2%	R225
RMS224AISCA	RES METAL FILM 22K 0.1W 2%	R226
RMS224AISCA	RES METAL FILM 22K 0.1W 2%	R227
⚠ RL101DJ0	RES.FUS M/F 10R 1/4W 5%	R228
RF102DJ0	RESISTOR C/FILM 100R 1/4W 5%	R229
RMS334AISCA	RES METAL FILM 33K 0.1W 2%	R230
RMS223AISCA	RES METAL FILM 2K2 0.1W 2%	R231
⚠ RL101DJ0	RES.FUS M/F 10R 1/4W 5%	R232
RW472PJ5	RESISTOR W/W POWER 470R 5% 4W	R233
RF473DJ0	RESISTOR C/FILM 4K7 1/4W 5%	R234

DRIVE/DEFLECTION PCB COMPONENTS LIST

COMPONENT	DESCRIPTION	IDENT
RF103DJ0	RESISTOR C/FILM 1K0 1/4W 5%	R235
RM1375DH0	RESISTOR M/FILM 137K 1/4W 1%	R236
RF472DJ0	RESISTOR C/FILM 470R 1/4W 5%	R237
RF102DJ0	RESISTOR C/FILM 100R 1/4W 5%	R238
RF103DJ0	RESISTOR C/FILM 1K0 1/4W 5%	R240
RM470LJ0	RES M/FILM 4R7 2W 5%	R241
RMS101AISCA	RES.METAL FILM 10R.0.1W.2%	R242
RMS473AISCA	RES METAL FILM 4K7 0.1W 2%	R243
RMS103AISCA	RES METAL FILM 1K.0.1W 2%	R244
RMS104AISCA	RES METAL FILM 10K 0.1W 2%	R245
RMS333AISCA	RES METAL FILM 3K3 0.1W 2%	R246
RMS102AISCA	RES METAL FILM 100R 0.1W 2%	R247
RMS104AISCA	RES METAL FILM 10K 0.1W 2%	R248
RMS101AISCA	RES.METAL FILM 10R.0.1W.2%	R250
RMS102AISCA	RES METAL FILM 100R 0.1W 2%	R252
RMS683AISCA	RES METAL FILM 6K8 0.1W 2%	R253
RMS683AISCA	RES METAL FILM 6K8 0.1W 2%	R254
RM331II0	RESISTOR M/FILM 33R 0.75W 2%	R255
RF103DJ0	RESISTOR C/FILM 1K0 1/4W 5%	R256
RF102DJ0	RESISTOR C/FILM 100R 1/4W 5%	R257
RMS224AISCA	RES METAL FILM 22K 0.1W 2%	R258
RM823II0	RESISTOR M/FILM 8K2 0.75W 2%	R260
RM823II0	RESISTOR M/FILM 8K2 0.75W 2%	R261
RM681LJ0	RES M/FILM 68R 2W 5%	R262
RF470DJ0	RESISTOR C/FILM 4R7 1/4W 5%	R263
RF104DJ0	RESISTOR C/FILM 10K 1/4W 5%	R300
RMS104AISCA	RES METAL FILM 10K 0.1W 2%	R301
RMS332AISCA	RES METAL FILM 330R 0.1W 2%	R302
⚠ RL102DJ0	RES.FUS M/F 100R 1/4W 5%	R303
RMS103AISCA	RES METAL FILM 1K.0.1W 2%	R304
RF100DJ0	RESISTOR C/FILM 1R0 1/4W 5%	R305
RF470DJ0	RESISTOR C/FILM 4R7 1/4W 5%	R306
RM222II0	RESISTOR M/FILM 220R 0.75W 2%	R307
RMS473AISCA	RES METAL FILM 4K7 0.1W 2%	R308
RMS474AISCA	RES METAL FILM 47K 0.1W 2%	R311
RF105DJ0	RESISTOR C/FILM 100K 1/4W 5%	R312
RMS303AISCA	RESISTOR M/FILM 3K0 0.1W 2%	R334
RF102DJ0	RESISTOR C/FILM 100R 1/4W 5%	R400

DRIVE/DEFLECTION PCB COMPONENTS LIST

COMPONENT	DESCRIPTION	IDENT
RF223DJ0	RESISTOR C/FILM 2K2 1/4W 5%	R401
RF473DJ0	RESISTOR C/FILM 4K7 1/4W 5%	R403
RF474DJ0	RESISTOR C/FILM 47K 1/4W 5%	R404
RF473DJ0	RESISTOR C/FILM 4K7 1/4W 5%	R405
RMS103AISCA	RES METAL FILM 1K.0.1W 2%	R406
RMS104AISCA	RES METAL FILM 10K 0.1W 2%	R407
RM275DH0	RESISTOR M/FILM 270K 1/4W 1%	R408
RF223DJ0	RESISTOR C/FILM 2K2 1/4W 5%	R410
RM393II0	RESISTOR M/FILM 3K9 0.75W 2%	R411
RMS105AISCA	RES METAL FILM 100K 0.1W 2%	R412
⚠ RL101DJ0	RES.FUS M/F 10R 1/4W 5%	R413
RF225DJ0	RESISTOR C/FILM 220K 1/4W 5%	R414
RF475DJ0	RESISTOR C/FILM 470K 1/4W 5%	R415
RMS105AISCA	RES METAL FILM 100K 0.1W 2%	R416
RM335DH0	RESISTOR M/FILM 330K 1/4W 1%	R418
⚠ RL101DJ0	RES.FUS M/F 10R 1/4W 5%	R420
RMS104AISCA	RES METAL FILM 10K 0.1W 2%	R423
RMS103AISCA	RES METAL FILM 1K.0.1W 2%	R601
RF155DJ0	RESISTOR C/FILM 150K 1/4W 5%	R602
RMS103AISCA	RES METAL FILM 1K.0.1W 2%	R603
RMS103AISCA	RES METAL FILM 1K.0.1W 2%	R604
RMS103AISCA	RES METAL FILM 1K.0.1W 2%	R605
RMS474AISCA	RES METAL FILM 47K 0.1W 2%	R606
RMS103AISCA	RES METAL FILM 1K.0.1W 2%	R607
RMS103AISCA	RES METAL FILM 1K.0.1W 2%	R608
RMS103AISCA	RES METAL FILM 1K.0.1W 2%	R609
RMS105AISCA	RES METAL FILM 100K 0.1W 2%	R610
RMS333AISCA	RES METAL FILM 3K3 0.1W 2%	R611
RMS333AISCA	RES METAL FILM 3K3 0.1W 2%	R612
RMS224AISCA	RES METAL FILM 22K 0.1W 2%	R613
RMS224AISCA	RES METAL FILM 22K 0.1W 2%	R614
RMS224AISCA	RES METAL FILM 22K 0.1W 2%	R615
RMS103AISCA	RES METAL FILM 1K.0.1W 2%	R616
RMS104AISCA	RES METAL FILM 10K 0.1W 2%	R617
RMS104AISCA	RES METAL FILM 10K 0.1W 2%	R618
RMS104AISCA	RES METAL FILM 10K 0.1W 2%	R619
RMS155CISFA	RES METAL FILM 150K 0.1W 1206	R620
RMS104AISCA	RES METAL FILM 10K 0.1W 2%	R621

DRIVE/DEFLECTION PCB COMPONENTS LIST

COMPONENT	DESCRIPTION	IDENT
RMS334AISCA	RES METAL FILM 33K 0.1W 2%	R622
RMS224AISCA	RES METAL FILM 22K 0.1W 2%	R623
RMS473AISCA	RES METAL FILM 4K7 0.1W 2%	R624
RMS333AISCA	RES METAL FILM 3K3 0.1W 2%	R625
RMS473AISCA	RES METAL FILM 4K7 0.1W 2%	R626
RMS224AISCA	RES METAL FILM 22K 0.1W 2%	R627
RMS473AISCA	RES METAL FILM 4K7 0.1W 2%	R628
RMS224AISCA	RES METAL FILM 22K 0.1W 2%	R629
RMS224AISCA	RES METAL FILM 22K 0.1W 2%	R630
RMS333AISCA	RES METAL FILM 3K3 0.1W 2%	R631
RMS224AISCA	RES METAL FILM 22K 0.1W 2%	R632
RMS224AISCA	RES METAL FILM 22K 0.1W 2%	R633
RMS224AISCA	RES METAL FILM 22K 0.1W 2%	R634
RMS224AISCA	RES METAL FILM 22K 0.1W 2%	R635
RMS473AISCA	RES METAL FILM 4K7 0.1W 2%	R636
RMS103AISCA	RES METAL FILM 1K.0.1W 2%	R637
RMS103AISCA	RES METAL FILM 1K.0.1W 2%	R638
RF103DJ0	RESISTOR C/FILM 1K0 1/4W 5%	R639
RMS103AISCA	RES METAL FILM 1K.0.1W 2%	R640
RMS222AISCA	RES METAL FILM 220R 0.1W 2%	R641
RMS103AISCA	RES METAL FILM 1K.0.1W 2%	R642
RMS103AISCA	RES METAL FILM 1K.0.1W 2%	R643
RMS103AISCA	RES METAL FILM 1K.0.1W 2%	R644
RMS103AISCA	RES METAL FILM 1K.0.1W 2%	R645
RMS103AISCA	RES METAL FILM 1K.0.1W 2%	R646
RMS222AISCA	RES METAL FILM 220R 0.1W 2%	R647
RMS103AISCA	RES METAL FILM 1K.0.1W 2%	R648
RF224DJ0	RESISTOR C/FILM 22K 1/4W 5%	R649
RMS103AISCA	RES METAL FILM 1K.0.1W 2%	R650
RMS103AISCA	RES METAL FILM 1K.0.1W 2%	R651
RMS103AISCA	RES METAL FILM 1K.0.1W 2%	R652
RMS222AISCA	RES METAL FILM 220R 0.1W 2%	R653
RMS103AISCA	RES METAL FILM 1K.0.1W 2%	R654
RMS103AISCA	RES METAL FILM 1K.0.1W 2%	R655
RMS223AISCA	RES METAL FILM 2K2 0.1W 2%	R656
RMS104AISCA	RES METAL FILM 10K 0.1W 2%	R657
RMS103AISCA	RES METAL FILM 1K.0.1W 2%	R658
RMS332AISCA	RES METAL FILM 330R 0.1W 2%	R659

DRIVE/DEFLECTION PCB COMPONENTS LIST

COMPONENT	DESCRIPTION	IDENT
RMS332AISCA	RES METAL FILM 330R 0.1W 2%	R660
RMS333AISCA	RES METAL FILM 3K3 0.1W 2%	R661
RMS333AISCA	RES METAL FILM 3K3 0.1W 2%	R662
RMS101AISCA	RES.METAL FILM 10R.0.1W.2%	R663
RMS222AISCA	RES METAL FILM 220R 0.1W 2%	R664
RMS103AISCA	RES METAL FILM 1K.0.1W 2%	R665
RMS222AISCA	RES METAL FILM 220R 0.1W 2%	R666
RMS474AISCA	RES METAL FILM 47K 0.1W 2%	R667
RMS474AISCA	RES METAL FILM 47K 0.1W 2%	R668
RMS474AISCA	RES METAL FILM 47K 0.1W 2%	R670
RMS000AISCA	RES ORO SURFACE MOUNT LINK	R671
RMS473AISCA	RES METAL FILM 4K7 0.1W 2%	R672
RMS105AISCA	RES METAL FILM 100K 0.1W 2%	R673
RMS334AISCA	RES METAL FILM 33K 0.1W 2%	R675
RMS104AISCA	RES METAL FILM 10K 0.1W 2%	R676
RMS000AISCA	RES ORO SURFACE MOUNT LINK	R677
RMS104AISCA	RES METAL FILM 10K 0.1W 2%	R678
RMS474AISCA	RES METAL FILM 47K 0.1W 2%	R679
RMS473AISCA	RES METAL FILM 4K7 0.1W 2%	R681
RMS105AISCA	RES METAL FILM 100K 0.1W 2%	R682
RMS335CISFA	RES METAL FILM 330K 200V 2%	R683
RF103DJ0	RESISTOR C/FILM 1K0 1/4W 5%	R684
RMS334AISCA	RES METAL FILM 33K 0.1W 2%	R685
RF333DJ0	RESISTOR C/FILM 3K3 1/4W 5%	R686
RMS105AISCA	RES METAL FILM 100K 0.1W 2%	R687
RMS104AISCA	RES METAL FILM 10K 0.1W 2%	R688
RMS334AISCA	RES METAL FILM 33K 0.1W 2%	R689
RMS474AISCA	RES METAL FILM 47K 0.1W 2%	R690
RF334DJ0	RESISTOR C/FILM 33K 1/4W 5%	R691
RMS331AISCA	RES METAL FILM 33R 0.1W 2%	R692
RMS473AISCA	RES METAL FILM 4K7 0.1W 2%	R693
RMS472AISCA	RES METAL FILM 470R 0.1W 2%	R694
RMS332AISCA	RES METAL FILM 330R 0.1W 2%	R695
RMS103AISCA	RES METAL FILM 1K.0.1W 2%	R696
RMS103AISCA	RES METAL FILM 1K.0.1W 2%	R697
RMS103AISCA	RES METAL FILM 1K.0.1W 2%	R698
RMS683AISCA	RES METAL FILM 6K8 0.1W 2%	R699
RMS104AISCA	RES METAL FILM 10K 0.1W 2%	R700

DRIVE/DEFLECTION PCB COMPONENTS LIST

COMPONENT	DESCRIPTION	IDENT
RMS333AISCA	RES METAL FILM 3K3 0.1W 2%	R701
RF103DJ0	RESISTOR C/FILM 1K0 1/4W 5%	R702
RMS333AISCA	RES METAL FILM 3K3 0.1W 2%	R703
RF222DJ0	RESISTOR C/FILM 220R 1/4W 5%	R704
RF222DJ0	RESISTOR C/FILM 220R 1/4W 5%	R705
RMS103AISCA	RES METAL FILM 1K.0.1W 2%	R706
RMS103AISCA	RES METAL FILM 1K.0.1W 2%	R707
RMS222AISCA	RES METAL FILM 220R 0.1W 2%	R708
RMS222AISCA	RES METAL FILM 220R 0.1W 2%	R709
RMS222AISCA	RES METAL FILM 220R 0.1W 2%	R710
RMS222AISCA	RES METAL FILM 220R 0.1W 2%	R711
RMS683AISCA	RES METAL FILM 6K8 0.1W 2%	R712
RMS473AISCA	RES METAL FILM 4K7 0.1W 2%	R713
RMS473AISCA	RES METAL FILM 4K7 0.1W 2%	R714
RMS683AISCA	RES METAL FILM 6K8 0.1W 2%	R715
RF222DJ0	RESISTOR C/FILM 220R 1/4W 5%	R716
RF472DJ0	RESISTOR C/FILM 470R 1/4W 5%	R717
RMS223AISCA	RES METAL FILM 2K2 0.1W 2%	R719
RL331DJ0	RES M/FUS 33R .25W	R720
RMS224AISCA	RES METAL FILM 22K 0.1W 2%	R721
RMS105AISCA	RES METAL FILM 100K 0.1W 2%	R722
RMS335CISFA	RES METAL FILM 330K 200V 2%	R723
RMS103AISCA	RES METAL FILM 1K.0.1W 2%	R724
RMS104AISCA	RES METAL FILM 10K 0.1W 2%	R726
RMS476AJSCA	RES METAL FILM 4M7 0.1W 5%	R727
RMS104AISCA	RES METAL FILM 10K 0.1W 2%	R728
RMS472AISCA	RES METAL FILM 470R 0.1W 2%	R729
RMS473AISCA	RES METAL FILM 4K7 0.1W 2%	R730
RMS223AISCA	RES METAL FILM 2K2 0.1W 2%	R731
RMS104AISCA	RES METAL FILM 10K 0.1W 2%	R732
RMS332AISCA	RES METAL FILM 330R 0.1W 2%	R733
RMS104AISCA	RES METAL FILM 10K 0.1W 2%	R734
RMS104AISCA	RES METAL FILM 10K 0.1W 2%	R735
RMS335CISFA	RES METAL FILM 330K 200V 2%	R736
RMS332AISCA	RES METAL FILM 330R 0.1W 2%	R742
RMS224AISCA	RES METAL FILM 22K 0.1W 2%	R743
RMS103AISCA	RES METAL FILM 1K.0.1W 2%	R744
RMS103AISCA	RES METAL FILM 1K.0.1W 2%	R745

DRIVE/DEFLECTION PCB COMPONENTS LIST

COMPONENT	DESCRIPTION	IDENT
RL331DJ0	RES M/FUS 33R .25W	R746
RMS103AISCA	RES METAL FILM 1K.0.1W 2%	R747
RMS222AISCA	RES METAL FILM 220R 0.1W 2%	R748
RMS103AISCA	RES METAL FILM 1K.0.1W 2%	R749
RMS104AISCA	RES METAL FILM 10K 0.1W 2%	R750
RMS224AISCA	RES METAL FILM 22K 0.1W 2%	R751
RMS105AISCA	RES METAL FILM 100K 0.1W 2%	R752
RMS105AISCA	RES METAL FILM 100K 0.1W 2%	R753
RMS105AISCA	RES METAL FILM 100K 0.1W 2%	R754
RMS224AISCA	RES METAL FILM 22K 0.1W 2%	R755
RMS224AISCA	RES METAL FILM 22K 0.1W 2%	R756
RMS103AISCA	RES METAL FILM 1K.0.1W 2%	R757
RMS335CISFA	RES METAL FILM 330K 200V 2%	R758
RMS155CISFA	RES METAL FILM 150K 0.1W 1206	R759
RF104DJ0	RESISTOR C/FILM 10K 1/4W 5%	R761
RMS104AISCA	RES METAL FILM 10K 0.1W 2%	R762
RMS224AISCA	RES METAL FILM 22K 0.1W 2%	R763
RMS473AISCA	RES METAL FILM 4K7 0.1W 2%	R764
RMS153AISCA	RES METAL FILM 1K5 0.1W 0805	R765
RMS105AISCA	RES METAL FILM 100K 0.1W 2%	R766
RMS334AISCA	RES METAL FILM 33K 0.1W 2%	R767
RMS155CISFA	RES METAL FILM 150K 0.1W 1206	R768
RMS473AISCA	RES METAL FILM 4K7 0.1W 2%	R769
RMS103AISCA	RES METAL FILM 1K.0.1W 2%	R770
RMS335CISFA	RES METAL FILM 330K 200V 2%	R771
RMS334AISCA	RES METAL FILM 33K 0.1W 2%	R772
RF103DJ0	RESISTOR C/FILM 1K0 1/4W 5%	R773
RF103DJ0	RESISTOR C/FILM 1K0 1/4W 5%	R774
RMS103AISCA	RES METAL FILM 1K.0.1W 2%	R775
RMS223AISCA	RES METAL FILM 2K2 0.1W 2%	R776
RMS474AISCA	RES METAL FILM 47K 0.1W 2%	R777
RMS474AISCA	RES METAL FILM 47K 0.1W 2%	R778
RMS474AISCA	RES METAL FILM 47K 0.1W 2%	R779
RMS473AISCA	RES METAL FILM 4K7 0.1W 2%	R780
RF103DJ0	RESISTOR C/FILM 1K0 1/4W 5%	R781
RMS103AISCA	RES METAL FILM 1K.0.1W 2%	R782
RMS334AISCA	RES METAL FILM 33K 0.1W 2%	R784
RMS104AISCA	RES METAL FILM 10K 0.1W 2%	R785

EFLECTION PCB COMPONENTS LIST

DESCRIPTION	IDENT
RES METAL FILM 1K.0.1W 2%	R786
RES METAL FILM 10K 0.1W 2%	R787
RES METAL FILM 10K 0.1W 2%	R788
RESISTOR C/FILM 4K7 1/4W 5%	R789
RESISTOR C/FILM 10K 1/4W 5%	R790
RES METAL FILM 4K7 0.1W 2%	R791
RES METAL FILM 10K 0.1W 2%	R792
RES METAL FILM 1K.0.1W 2%	R793
RESISTOR C/FILM 22K 1/4W 5%	R794
RES METAL FILM 10K 0.1W 2%	R795
RES METAL FILM 10K 0.1W 2%	R797
RES METAL FILM 330R 0.1W 2%	R798
RESISTOR C/FILM 33K 1/4W 5%	R799
RES.FUS M/F 10R 1/2W 5%	R800
RESISTOR C/FILM 220R 1/4W 5%	R822
RESISTOR M/FILM 47R 0.75W 2%	R824
RESISTOR C/COMP 220R 1/2W 10%	R831
RESISTOR M/FILM 33K 1/4W 1%	R847
RESISTOR C/COMP 100R 1/2W	R852
RESISTOR M/FILM 33K 1/4W 1%	R869
RESISTOR C/COMP 100R 1/2W	R874
RESISTOR M/FILM 1K 1/4W 1%	R877
RESISTOR M/FILM 33K 1/4W 1%	R891
RESISTOR C/COMP 100R 1/2W	R896
RES METAL FILM 150K 0.1W 1206	R1005
RESISTOR C/FILM 1K0 1/4W 5%	R1006
RES METAL FILM 10K 0.1W 2%	R1007
RESISTOR M/FILM 47K 1/4W 1%	R1008
RESISTOR M/FILM 100K 1/4W 1%	R1101
RESISTOR M/FILM 47K 1/4W 1%	R1102
RESISTOR M/FILM 22K 1/4W 1%	R1103
RESISTOR M/FILM 10K 1/4W 1%	R1104
RESISTOR M/FILM 4K7 1/4W 1%	R1105
RESISTOR M/FILM 2K2 1/4W 1%	R1106
RESISTOR C/FILM 1K0 1/4W 5%	R1601
RESISTOR C/FILM 100K 1/4W 5%	R1602
RES METAL FILM 10K 0.1W 2%	R1604
RES METAL FILM 6K8 0.1W 2%	R1605

DRIVE/DEFLECTION PCB COMPONENTS LIST

COMPONENT	DESCRIPTION	IDENT
RMS224AISCA	RES METAL FILM 22K 0.1W 2%	R1606
RMS103AISCA	RES METAL FILM 1K.0.1W 2%	R1607
RMS224AISCA	RES METAL FILM 22K 0.1W 2%	R1608
RMS472AISCA	RES METAL FILM 470R 0.1W 2%	R1609
RMS104AISCA	RES METAL FILM 10K 0.1W 2%	R1610
RMS105CISFA	RES M/FILM 100K 0.1W 1206	R1611
RMS104AISCA	RES METAL FILM 10K 0.1W 2%	R1612
RMS105AISCA	RES METAL FILM 100K 0.1W 2%	R1613
RMS223AISCA	RES METAL FILM 2K2 0.1W 2%	R1614
RMS106CISFA	RES METAL FILM 1M0 200V 2%	R1615
RMS106CISFA	RES METAL FILM 1M0 200V 2%	R1616
RF103DJ0	RESISTOR C/FILM 1K0 1/4W 5%	R1617
RMS000AISCA	RES ORO SURFACE MOUNT LINK	R1618
RMS000AISCA	RES ORO SURFACE MOUNT LINK	R1620
RMS104AISCA	RES METAL FILM 10K 0.1W 2%	R1725
TRANSFORMERS		
⚠ T03577I01	TRANSFORMER SMPS ELDOR	T1
T03166I01	TRANSFORMER HZ DRIVE SERIES 14	T201
L03303I01	H SHIFT COIL 514	T202
L03303I01	H SHIFT COIL 514	T203
T03883I01	TRANS F/B P/SON ZTFJ54021A	T400
TRANSISTORS		
QV0580FU2	TRANS STP5NA80FI	TR1
Z#0001	COMPOUND HEATSINK	TR1
QV0580FU2	TRANS STP5NA80FI	TR2
Z#0001	COMPOUND HEATSINK	TR2
QS0327UJ5	TRANSISTOR BC327	TR3
QSS0857UUSCC	TRANSISTOR BC857 SOT 23	TR4
QSS0857UUSCC	TRANSISTOR BC857 SOT 23	TR5
QSS0857UUSCC	TRANSISTOR BC857 SOT 23	TR6
QSS0847UUSCC	TRANSISTOR BC847,SOT23 NPN	TR7
QP0086UU0	TRANSISTOR HI-VOLT BUX86	TR8 PREFORM
QV0455UU1	TRANSISTOR BUK455-200A N CHAN.	TR100 FIT WITH BEAD
QSS0847UUSCC	TRANSISTOR BC847,SOT23 NPN	TR101
QS0547BP0	TRANSISTOR NPN BC547B	TR102
QS0327UJ5	TRANSISTOR BC327	TR105

DRIVE/DEFLECTION PCB COMPONENTS LIST

COMPONENT	DESCRIPTION	IDENT
QQ2522AP0	TRANSISTOR PHILIPS BU2522AF	TR201
Z#0001	COMPOUND HEATSINK	TR201
QV0455UU1	TRANSISTOR BUK455-200A N CHAN.	TR202
QV0455UU1	TRANSISTOR BUK455-200A N CHAN.	TR203
QV0455UU1	TRANSISTOR BUK455-200A N CHAN.	TR204
QSS0042UUSCC	TRANS A42 100MA 200V S0T23	TR205
QSS0042UUSCC	TRANS A42 100MA 200V S0T23	TR206
QSS0042UUSCC	TRANS A42 100MA 200V S0T23	TR207
QE2106AU5	TRANS P-CHAN ENCHANCE FET	TR208
QV0553UU0	TRANSISTOR POWER FET 60V	TR210
QS0652UU0	TRANSISTOR ZTX652	TR211
QS0652UU0	TRANSISTOR ZTX652	TR212
QS0337UT0	TRANSISTOR BC337-RL1	TR213
QS4125UU5	TRANSISTOR 2N4125	TR214
QSS0847UUSCC	TRANSISTOR BC847,SOT23 NPN	TR301
QSS0847UUSCC	TRANSISTOR BC847,SOT23 NPN	TR400
QSS0847UUSCC	TRANSISTOR BC847,SOT23 NPN	TR401
QV0660FU2	TRANSISTOR MOS FET N CHAN 6A	TR402
QS4125UU5	TRANSISTOR 2N4125	TR403
QV9620GU2	TRANSISTOR MOS FET P CHAN 3A	TR404
QSS0847UUSCC	TRANSISTOR BC847,SOT23 NPN	TR601
QSS0042UUSCC	TRANS A42 100MA 200V S0T23	TR602
QS4125UU5	TRANSISTOR 2N4125	TR603
QSS0847UUSCC	TRANSISTOR BC847,SOT23 NPN	TR604
QS4123UU0	TRANSISTOR 2N4123	TR605
QE7000UU0	TRANSISTOR N-CHAN.FET 2N7000	TR606
QSS0847UUSCC	TRANSISTOR BC847,SOT23 NPN	TR607
QSS0857UUSCC	TRANSISTOR BC857 SOT 23	TR608
QSS0847UUSCC	TRANSISTOR BC847,SOT23 NPN	TR612
QS0547BP0	TRANSISTOR NPN BC547B	TR1001

VARIABLE RESISTORS AND POTENTIOMETERS

RQ103AL2	POT PRESET 1K0 0.1W 20% HZ	VR1
RR474GK2	PRESET MF 47K 5M	VR100
Z#0217	FLOFIX P.A. 29/12/180 HOT MELT	VR100

MISCELLANEOUS

A05822I01	F/B TRANSF LEAD ASSY 17" AMIGA
GC1074I01	LABEL CAUTION ELECTRIC SHOCK

DRIVE/DEFLECTION PCB COMPONENTS LIST

COMPONENT	DESCRIPTION	IDENT
GC1074I01	LABEL CAUTION ELECTRIC SHOCK	
HC0008AB0	CLIP MOUNTING TRANSISTOR TO218	FIX TR1 TO H/SINK
HC0008AB0	CLIP MOUNTING TRANSISTOR TO218	FIX TR2 TO H/SINK
HC0008AB0	CLIP MOUNTING TRANSISTOR TO218	FIX TR201 TO H/SINK
HC0008AB0	CLIP MOUNTING TRANSISTOR TO218	FIX IC301 TO H/SINK
HC0009AB0	CLIP MOUNTING TRANSISTOR TO220	FIX D213 TO H/SINK
HC0009AB0	CLIP MOUNTING TRANSISTOR TO220	FIX TR402 TO H/SINK
HH0013HA0	HEATSINK REDPOINT TV125	FIT TO D17
HR0003VJ0	RIVSCREW AVDEL 1712-3509	FIX D17 TO H/SINK
HT0412YA4	SCREW SELF-TAP PSM"PT"KC40X12	FIX T400 TO H/SINK
HT0464AA3	SCREW 4-40 x 1/4INCH S.T. BZP.	FIX IC2 TO H/SINK
HT0464AA3	SCREW 4-40 x 1/4INCH S.T. BZP.	FIX IC302 TO H/SINK
JI0172UU2	OPTO ISOLATOR CNY17/2	OPTO1
KM2409Y01	PCB MTG. SPADE TERM. AMP 62409	GND
LU0001MK1	FERRITE BEAD FX1115	FIT TO CENTER LEG OF TR100
LU003M01	FERRITE BEAD 4330-030-3218	FIT TO L7
LU003M01	FERRITE BEAD 4330-030-3218	FIT TO L3
LU003M01	FERRITE BEAD 4330-030-3218	FIT TO L4
LU003M01	FERRITE BEAD 4330-030-3218	FIT TO LK140
LU003M01	FERRITE BEAD 4330-030-3218	FIT TO LK124,156
LU003M01	FERRITE BEAD 4330-030-3218	FIT TO R30
LU003M01	FERRITE BEAD 4330-030-3218	FIT TO ANODE LEG OF D17
LU003M01	FERRITE BEAD 4330-030-3218	FIT TO CATHOD LEG OF D408
LU003M01	FERRITE BEAD 4330-030-3218	FIT TO CATHODE LEG OF D101
LU003M01	FERRITE BEAD 4330-030-3218	FIT TO LK122
LU005N01	FERRITE TUBE 4330 030 33790	
M01864I02	HEATSINK T.BASE SER.9	FIT TO IC2
M01864I02	HEATSINK T.BASE SER.9	FIT TO IC302
M02967I02	HEATSINK STAVER TF101	FIT TO TR1
M02967I02	HEATSINK STAVER TF101	FIT TO TR2
M03861I01	HEATSINK	TO FIT TR201,402, IC301,D213
RF104DJ0	RESISTOR C/FILM 10K 1/4W 5%	FIT FROM D612 TO R789
RMS000AISCA	RES ORO SURFACE MOUNT LINK	J26,27,34,37
RMS000AISCA	RES ORO SURFACE MOUNT LINK	J24

DRIVE/DEFLECTION PCB COMPONENTS LIST

COMPONENT	DESCRIPTION	IDENT
RMS000AISCA	RES ORO SURFACE MOUNT LINK	J2,4,5,7,8,20
RMS000AISCA	RES ORO SURFACE MOUNT LINK	J40,42
RMS000AISCA	RES ORO SURFACE MOUNT LINK	J33
RMS000AISCA	RES ORO SURFACE MOUNT LINK	J16,17,18,23,25
RMS000CISFA	RES ORO SURFACE MOUNT LINK	J11,28,35
RMS000CISFA	RES ORO SURFACE MOUNT LINK	J10,13,14
RT005QN0	THERMISTOR 263100P2332T333 01	PTC1
⚠ SE0008UU0	RELAY 12V 300OHM COIL 5A	RL1,1000
SP0013UU0	SWITCH PCB MTG HORZ	SW1101,1102,1103,
SP0013UU0	SWITCH PCB MTG HORZ	SW1104,1105,1106
⚠ WA0519A01	PSU SYNC LEAD ASSY	FLOATING END PL4 MAIN PCB
WA0647A03	DYNAMIC FOCUS LEAD ASSY	
WA0683A01	RFI EARTH LEAD	
WL2210TU1	LINK WIRE - SIZE 5MM+10MM+5MM	
WS0100SB0	SLEEVING SILICONE 1MM	2 X 10MM OUTER LEGS TR100
WS0200NB0	SLEEVING NEOPRENE BLACK	FIT TWO PIECES
XC0031UU6	CRYSTAL 8.0MHz HC18	X601
YS0009WU0	SIL PAD TO220 CLIP MOUNT	FIX D213 TO H/SINK
Z#0001	COMPOUND HEATSINK	APPLY TO IC301
Z#0001	COMPOUND HEATSINK	APPLY TO TR402
Z#0217	FLOFIX P.A. 29/12/180 HOT MELT	RES MOD D612/R789
Z#0413	LOCTITE SUPERFLEX	BETWEEN C5 & C201
Z#0413	LOCTITE SUPERFLEX	BETWEEN C5 & C21
Z#0413	LOCTITE SUPERFLEX	C7
Z#0413	LOCTITE SUPERFLEX	BETWEEN R4A & C20

TUBE BASE PCB
COMPONENTS LIST

TUBE BASE PCB COMPONENTS LIST

PART NUMBER AO5838I01

COMPONENT	DESCRIPTION	IDENT
CAPACITORS		
CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C800
CJS101JJSBCA	CAP CER M/L 10PF 50V 5%	C801
CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C802
CJS101JJSBCA	CAP CER M/L 10PF 50V 5%	C803
CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C804
CJS101JJSBCA	CAP CER M/L 10PF 50V 5%	C805
CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C806
CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C807
CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C808
CA107JL7H	CAP A/ELEC 10uF 50V 20% 105DEG	C810
CA108FM7	CAP A/ELEC 100uF 25V -20%+50%	C811
CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C812
CM224NK64	CAP.MET/POLY 22NF 250V 10%	C813
CM224NK64	CAP.MET/POLY 22NF 250V 10%	C814
CD471YL7D	CAP CER/DISC 47pF 2KV 20%	C815
CD103YL7E	CAP CER/DISC 1NF 2KV 20%	C816
CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C817
CA108FM7	CAP A/ELEC 100uF 25V -20%+50%	C818
CJS471JJSBCA	CAP CER M/L 47P 50V 5%	C819
CJS471JJSBCA	CAP CER M/L 47P 50V 5%	C820
CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C821
CJS471JJSBCA	CAP CER M/L 47P 50V 5%	C822
CJS224KKSLFA	CAP CER M/L 22N 100V	C823
CM2258K64	CAP MET/POLY 0.22UF 63V 10%	C824
CJS224KKSLFA	CAP CER M/L 22N 100V	C825
CJS224KKSLFA	CAP CER M/L 22N 100V	C826
CJS471JJSBCA	CAP CER M/L 47P 50V 5%	C827
CJS471JJSBCA	CAP CER M/L 47P 50V 5%	C828
CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C829
CJS471JJSBCA	CAP CER M/L 47P 50V 5%	C830
CJS224KKSLFA	CAP CER M/L 22N 100V	C831
CM2258K64	CAP MET/POLY 0.22UF 63V 10%	C832
CJS224KKSLFA	CAP CER M/L 22N 100V	C833
CJS224KKSLFA	CAP CER M/L 22N 100V	C834
CJS471JJSBCA	CAP CER M/L 47P 50V 5%	C835
CJS471JJSBCA	CAP CER M/L 47P 50V 5%	C836

TUBE BASE PCB COMPONENTS LIST

COMPONENT	DESCRIPTION	IDENT
DSS4448MUSEB	DIODE 4448 100MA 50V	D821
DSS4448MUSEB	DIODE 4448 100MA 50V	D822
DSS4448MUSEB	DIODE 4448 100MA 50V	D823
DSS4448MUSEB	DIODE 4448 100MA 50V	D824
DSS4448MUSEB	DIODE 4448 100MA 50V	D825
DSS0020LUSCC	DIODE BAS 20 SOT 23	D826
DSS4448MUSEB	DIODE 4448 100MA 50V	D828
DSS4448MUSEB	DIODE 4448 100MA 50V	D829
DSS4448MUSEB	DIODE 4448 100MA 50V	D830
DSS4448MUSEB	DIODE 4448 100MA 50V	D831
DSS4448MUSEB	DIODE 4448 100MA 50V	D832
DSS4448MUSEB	DIODE 4448 100MA 50V	D833
DSS4448MUSEB	DIODE 4448 100MA 50V	D834
DSS4448MUSEB	DIODE 4448 100MA 50V	D835
DSS4448MUSEB	DIODE 4448 100MA 50V	D836
DSS4448MUSEB	DIODE 4448 100MA 50V	D837
INTEGRATED CIRCUITS		
IL48810U2	CIRCUIT INT TDA4881	IC800
IL0324NU2	CIRCUIT INT.LM324N QUAD OP AMP	IC801
INDUCTORS/CHOKES		
LW223SK3	CHOKE 2U2H-HIGH SRF-B78108	L804
LW332SK2	CHOKE OU33H	L805
LW223SK3	CHOKE 2U2H-HIGH SRF-B78108	L806
LW332SK2	CHOKE OU33H	L807
LW223SK3	CHOKE 2U2H-HIGH SRF-B78108	L808
LW332SK2	CHOKE OU33H	L809
WL2212TU1	LINK WIRE 5MM+12MM+5MM	L811
LINKS		
WL2210TU2	WIRE LINK 7MM X10MM X 7MM	LK826 FIT WITH FERRITE BEAD
PLUGS		
KP0SHFA16	PLUG NH SERIES JST PART	PL802
WA0536A01	LEAD ASSY 26 WAY SER.14 T/B	PL803 - PL601

TUBE BASE PCB COMPONENTS LIST

COMPONENT	DESCRIPTION	IDENT
CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C837
CJS471JJSBCA	CAP CER M/L 47P 50V 5%	C838
CJS224KKSLFA	CAP CER M/L 22N 100V	C839
CM2258K64	CAP MET/POLY 0.22UF 63V 10%	C840
CJS224KKSLFA	CAP CER M/L 22N 100V	C841
CJS224KKSLFA	CAP CER M/L 22N 100V	C842
CJS152JJSBCA	CAP CER M/L 150PF 50V 5%	C843
CJS152JJSBCA	CAP CER M/L 150PF 50V 5%	C844
CA476ML7	CAP A/ELEC 4.7uF 160V 20%	C845
CA476ML7	CAP A/ELEC 4.7uF 160V 20%	C846
CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C847
CJS224KKSLFA	CAP CER M/L 22N 100V	C848
CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C850
CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C852
CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C853
CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C854
CJS224KKSLFA	CAP CER M/L 22N 100V	C855
CJS105FPSSCA	CAP 100N 25V (Y5V-25U) 0805	C865
CD472SK7	CAP CER/DISC 470pF 500V 10%	C867
DIODES		
DSS4448MUSEB	DIODE 4448 100MA 50V	D803
DSS4448MUSEB	DIODE 4448 100MA 50V	D804
DSS4448MUSEB	DIODE 4448 100MA 50V	D805
DSS4448MUSEB	DIODE 4448 100MA 50V	D806
DSS4448MUSEB	DIODE 4448 100MA 50V	D807
DSS4448MUSEB	DIODE 4448 100MA 50V	D808
DSS4448MUSEB	DIODE 4448 100MA 50V	D809
DSS0020LUSCC	DIODE BAS 20 SOT 23	D810
DSS4448MUSEB	DIODE 4448 100MA 50V	D811
DSS4448MUSEB	DIODE 4448 100MA 50V	D812
DSS4448MUSEB	DIODE 4448 100MA 50V	D813
DSS4448MUSEB	DIODE 4448 100MA 50V	D814
DSS4448MUSEB	DIODE 4448 100MA 50V	D815
DSS4448MUSEB	DIODE 4448 100MA 50V	D816
DSS4448MUSEB	DIODE 4448 100MA 50V	D817
DSS0020LUSCC	DIODE BAS 20 SOT 23	D818
DSS4448MUSEB	DIODE 4448 100MA 50V	D820

TUBE BASE PCB COMPONENTS LIST

COMPONENT	DESCRIPTION	IDENT
RESISTORS		
RMS224AISCA	RES METAL FILM 22K 0.1W 2%	R801
RMS222AISCA	RES METAL FILM 220R 0.1W 2%	R803
RMS222AISCA	RES METAL FILM 220R 0.1W 2%	R804
RMS331AISCA	RES METAL FILM 33R 0.1W 2%	R805
RMS476AJSCA	RES METAL FILM 4M7 0.1W 5%	R806
RMS222AISCA	RES METAL FILM 220R 0.1W 2%	R807
RMS222AISCA	RES METAL FILM 220R 0.1W 2%	R808
RMS331AISCA	RES METAL FILM 33R 0.1W 2%	R809
RMS476AJSCA	RES METAL FILM 4M7 0.1W 5%	R810
RMS222AISCA	RES METAL FILM 220R 0.1W 2%	R811
RMS222AISCA	RES METAL FILM 220R 0.1W 2%	R812
RMS331AISCA	RES METAL FILM 33R 0.1W 2%	R813
RMS476AJSCA	RES METAL FILM 4M7 0.1W 5%	R814
RMS683AISCA	RES METAL FILM 6K8 0.1W 2%	R815
RMS683AISCA	RES METAL FILM 6K8 0.1W 2%	R816
RMS103AISCA	RES METAL FILM 1K.0.1W 2%	R817
RMS103AISCA	RES METAL FILM 1K.0.1W 2%	R818
RMS334AISCA	RES METAL FILM 33K 0.1W 2%	R819
RMS472AISCA	RES METAL FILM 470R 0.1W 2%	R820
RMS223AISCA	RES METAL FILM 2K2 0.1W 2%	R821
RMS222AISCA	RES METAL FILM 220R 0.1W 2%	R823
RMS222AISCA	RES METAL FILM 220R 0.1W 2%	R825
RMS222AISCA	RES METAL FILM 220R 0.1W 2%	R828
RMS104AISCA	RES METAL FILM 10K 0.1W 2%	R829
RMS106CISFA	RES METAL FILM 1M0 200V 2%	R830
RMS106CISFA	RES METAL FILM 1M0 200V 2%	R832
RMS103AISCA	RES METAL FILM 1K.0.1W 2%	R833
RMS331AISCA	RES METAL FILM 33R 0.1W 2%	R834
RMS331AISCA	RES METAL FILM 33R 0.1W 2%	R835
RM153NJ9	RESISTOR MET/FILM 1K5 3W	R836
RMS222AISCA	RES METAL FILM 220R 0.1W 2%	R837
RMS331AISCA	RES METAL FILM 33R 0.1W 2%	R838
RMS472AISCA	RES METAL FILM 470R 0.1W 2%	R839
RMS472AISCA	RES METAL FILM 470R 0.1W 2%	R840
RMS222AISCA	RES METAL FILM 220R 0.1W 2%	R841
RMS222AISCA	RES METAL FILM 220R 0.1W 2%	R842
RMS101AISCA	RES.METAL FILM 10R.0.1W.2%	R843

TUBE BASE PCB COMPONENTS LIST

COMPONENT	DESCRIPTION	IDENT
RMS331AISCA	RES METAL FILM 33R 0.1W 2%	R845
RMS334AISCA	RES METAL FILM 33K 0.1W 2%	R846
RMS683AISCA	RES METAL FILM 6K8 0.1W 2%	R848
RMS106CISFA	RES METAL FILM 1M0 200V 2%	R849
RMS335CISFA	RES METAL FILM 330K 200V 2%	R850
RMS224AISCA	RES METAL FILM 22K 0.1W 2%	R851
RMS683AISCA	RES METAL FILM 6K8 0.1W 2%	R853
RMS103AISCA	RES METAL FILM 1K.0.1W 2%	R854
RMS103AISCA	RES METAL FILM 1K.0.1W 2%	R855
RMS331AISCA	RES METAL FILM 33R 0.1W 2%	R856
RMS331AISCA	RES METAL FILM 33R 0.1W 2%	R857
RM153NJ9	RESISTOR MET/FILM 1K5 3W	R858
RMS222AISCA	RES METAL FILM 220R 0.1W 2%	R859
RMS331AISCA	RES METAL FILM 33R 0.1W 2%	R860
RMS472AISCA	RES METAL FILM 470R 0.1W 2%	R861
RMS472AISCA	RES METAL FILM 470R 0.1W 2%	R862
RMS222AISCA	RES METAL FILM 220R 0.1W 2%	R863
RMS222AISCA	RES METAL FILM 220R 0.1W 2%	R864
RMS101AISCA	RES.METAL FILM 10R.0.1W.2%	R865
RMS331AISCA	RES METAL FILM 33R 0.1W 2%	R867
RMS334AISCA	RES METAL FILM 33K 0.1W 2%	R868
RMS683AISCA	RES METAL FILM 6K8 0.1W 2%	R870
RMS106CISFA	RES METAL FILM 1M0 200V 2%	R871
RMS335CISFA	RES METAL FILM 330K 200V 2%	R872
RMS224AISCA	RES METAL FILM 22K 0.1W 2%	R873
RMS683AISCA	RES METAL FILM 6K8 0.1W 2%	R875
RMS103AISCA	RES METAL FILM 1K.0.1W 2%	R876
RMS331AISCA	RES METAL FILM 33R 0.1W 2%	R878
RMS331AISCA	RES METAL FILM 33R 0.1W 2%	R879
RM153NJ9	RESISTOR MET/FILM 1K5 3W	R880
RMS222AISCA	RES METAL FILM 220R 0.1W 2%	R881
RMS331AISCA	RES METAL FILM 33R 0.1W 2%	R882
RMS472AISCA	RES METAL FILM 470R 0.1W 2%	R883
RMS472AISCA	RES METAL FILM 470R 0.1W 2%	R884
RMS222AISCA	RES METAL FILM 220R 0.1W 2%	R885
RMS222AISCA	RES METAL FILM 220R 0.1W 2%	R886
RMS101AISCA	RES.METAL FILM 10R.0.1W.2%	R887
RMS331AISCA	RES METAL FILM 33R 0.1W 2%	R889

TUBE BASE PCB COMPONENTS LIST

COMPONENT	DESCRIPTION	IDENT
RMS334AISCA	RES METAL FILM 33K 0.1W 2%	R890
RMS683AISCA	RES METAL FILM 6K8 0.1W 2%	R892
RMS106CISFA	RES METAL FILM 1M0 200V 2%	R893
RMS335CISFA	RES METAL FILM 330K 200V 2%	R894
RMS224AISCA	RES METAL FILM 22K 0.1W 2%	R895
RMS683AISCA	RES METAL FILM 6K8 0.1W 2%	R897
RMS103AISCA	RES METAL FILM 1K.0.1W 2%	R898
RMS334AISCA	RES METAL FILM 33K 0.1W 2%	R900
RMS334AISCA	RES METAL FILM 33K 0.1W 2%	R901
RMS334AISCA	RES METAL FILM 33K 0.1W 2%	R902
RMS223AISCA	RES METAL FILM 2K2 0.1W 2%	R903
RMS103AISCA	RES METAL FILM 1K.0.1W 2%	R905
RMS224AISCA	RES METAL FILM 22K 0.1W 2%	R906
RMS334AISCA	RES METAL FILM 33K 0.1W 2%	R907
RMS476AJSCA	RES METAL FILM 4M7 0.1W 5%	R908
RMS103AISCA	RES METAL FILM 1K.0.1W 2%	R910
RMS333AISCA	RES METAL FILM 3K3 0.1W 2%	R911
RMS331AISCA	RES METAL FILM 33R 0.1W 2%	R912
RMS331AISCA	RES METAL FILM 33R 0.1W 2%	R913
RMS331AISCA	RES METAL FILM 33R 0.1W 2%	R914
RMS103AISCA	RES METAL FILM 1K.0.1W 2%	R915
RMS101AISCA	RES.METAL FILM 10R.0.1W.2%	R916
RMS101AISCA	RES.METAL FILM 10R.0.1W.2%	R917
RMS101AISCA	RES.METAL FILM 10R.0.1W.2%	R918
RMS683AISCA	RES METAL FILM 6K8 0.1W 2%	R920
RMS683AISCA	RES METAL FILM 6K8 0.1W 2%	R921
RMS683AISCA	RES METAL FILM 6K8 0.1W 2%	R922
RMS683AISCA	RES METAL FILM 6K8 0.1W 2%	R923
RMS683AISCA	RES METAL FILM 6K8 0.1W 2%	R924
RMS683AISCA	RES METAL FILM 6K8 0.1W 2%	R925
SOCKETS		
KS0009U10	SOCKET CRT DYNAMIC FOCUS	SK801
TRANSISTORS		
QS4123UU0	TRANSISTOR 2N4123	TR800
QS4123UU0	TRANSISTOR 2N4123	TR801
QSS0847UUSCC	TRANSISTOR BC847,SOT23 NPN	TR802

TUBE BASE PCB COMPONENTS LIST

COMPONENT	DESCRIPTION	IDENT
QS0235AP0	TRANSISTOR BFQ235A	TR803
QS0235AP0	TRANSISTOR BFQ235A	TR804
QS0255AP5	TRANSISTOR BFQ255A	TR805
QSS0042UUSCC	TRANS A42 100MA 200V S0T23	TR806
QSS0847UUSCC	TRANSISTOR BC847,SOT23 NPN	TR807
QS0235AP0	TRANSISTOR BFQ235A	TR808
QS0235AP0	TRANSISTOR BFQ235A	TR809
QS0255AP5	TRANSISTOR BFQ255A	TR810
QSS0042UUSCC	TRANS A42 100MA 200V S0T23	TR811
QSS0847UUSCC	TRANSISTOR BC847,SOT23 NPN	TR812
QS0235AP0	TRANSISTOR BFQ235A	TR813
QS0235AP0	TRANSISTOR BFQ235A	TR814
QS0255AP5	TRANSISTOR BFQ255A	TR815
QSS0042UUSCC	TRANS A42 100MA 200V S0T23	TR816
QS4123UU0	TRANSISTOR 2N4123	TR817
QSS0042UUSCC	TRANS A42 100MA 200V S0T23	TR818
MISCELLANEOUS		
CGAG20XQ7	CAP SPARK GAP 1500V 30%	SG1,2,3
FT0008AA0	TIEWRAP SMALL	SECURE FOCUS & AI LEADS
KM2409Y01	PCB MTG. SPADE TERM. AMP 62409	GRD
LU003M01	FERRITE BEAD 4330-030-3218	FIT TO LK826
P03341I01	TUBE-BASE SPACER & INSULATOR	FIT TO T-BASE TRANSISTORS
RMS000CISFA	RES ORO SURFACE MOUNT LINK	J801,802
Z#0217	FLOFIX P.A. 29/12/180 HOT MELT	A1 LEAD

DYNAMIC FOCUS PCB
COMPONENTS LIST

DYNAMIC FOCUS PCB COMPONENTS LIST

PART NUMBER AO5840I02

COMPONENT	DESCRIPTION	IDENT
CAPACITORS		
CM104TL66	CAP MET/POLY 10NF 630V 20%	C1
CM104TL66	CAP MET/POLY 10NF 630V 20%	C2
CM104TL66	CAP MET/POLY 10NF 630V 20%	C3
CA107JL7	CAP A/ELEC 10uF 50V 20%	C4
CK104FL0	CAP CER/TUB 10nF 25V 20%	C5
CK104FL0	CAP CER/TUB 10nF 25V 20%	C6
CA107JL7	CAP A/ELEC 10uF 50V 20%	C8
CK105FP0	CAP CER/TUB .1uF 25V-20+80%	C11
CK104FL0	CAP CER/TUB 10nF 25V 20%	C12
CK103JK0	CAP CER/TUB 1nF 50V 10%	C13
CM224NK64	CAP.MET/POLY 22NF 250V 10%	C14
CK221JJ0	CAP CER/TUB 22pF 50V 5%	C15
CK105FP0	CAP CER/TUB .1uF 25V-20+80%	C16
DIODES		
DF0159UU0	DIODE BA159	D1
DF0159UU0	DIODE BA159	D2
DF0159UU0	DIODE BA159	D3
DS4148UU0	DIODE 1N4148	D4
DS4148UU0	DIODE 1N4148	D5
DS4148UU0	DIODE 1N4148	D6
DS4148UU0	DIODE 1N4148	D7
INDUCTORS/CHOKES		
LW824SK1	CHOKE 82UH 10%	L1
PLUGS		
KP0BXHA10	PLUG XH SERIES 2.5MM 10 WAY	PL1
KP0004U04	PLUG SIDE ENTRY 2.5MM PCB MTG	PL1
RESISTORS		
⚠ RL102DJ0	RES.FUS M/F 100R 1/4W 5%	R1
RM305DH0	RESISTOR M/FILM 300K 1/4W 1%	R2
RM305DH0	RESISTOR M/FILM 300K 1/4W 1%	R3
RM305DH0	RESISTOR M/FILM 300K 1/4W 1%	R4
RK104GK0	RESISTOR C/COMP 10K 1/2W 10%	R5

DYNAMIC FOCUS PCB COMPONENTS LIST

COMPONENT	DESCRIPTION	IDENT
RK103GK0	RESISTOR C/COMP 1K0 1/2W 10%	R6
RM305DH0	RESISTOR M/FILM 300K 1/4W 1%	R7
RM305DH0	RESISTOR M/FILM 300K 1/4W 1%	R8
RM305DH0	RESISTOR M/FILM 300K 1/4W 1%	R11
RF124DJ0	RESISTOR C/FILM 12K 1/4W 5%	R12
RF224DJ0	RESISTOR C/FILM 22K 1/4W 5%	R13
RF683DJ0	RESISTOR C/FILM 6K8 1/4W 5%	R14
RF473DJ0	RESISTOR C/FILM 4K7 1/4W 5%	R15
RF105DJ0	RESISTOR C/FILM 100K 1/4W 5%	R16
RF105DJ0	RESISTOR C/FILM 100K 1/4W 5%	R17
RF473DJ0	RESISTOR C/FILM 4K7 1/4W 5%	R18
RF472DJ0	RESISTOR C/FILM 470R 1/4W 5%	R21
RF685DJ0	RESISTOR C/FILM 680K 1/4W 5%	R22
RF474DJ0	RESISTOR C/FILM 47K 1/4W 5%	R23
RF474DJ0	RESISTOR C/FILM 47K 1/4W 5%	R24
RF474DJ0	RESISTOR C/FILM 47K 1/4W 5%	R25
RF474DJ0	RESISTOR C/FILM 47K 1/4W 5%	R26
RF333DJ0	RESISTOR C/FILM 3K3 1/4W 5%	R27
RF102DJ0	RESISTOR C/FILM 100R 1/4W 5%	R29

TRANSISTORS

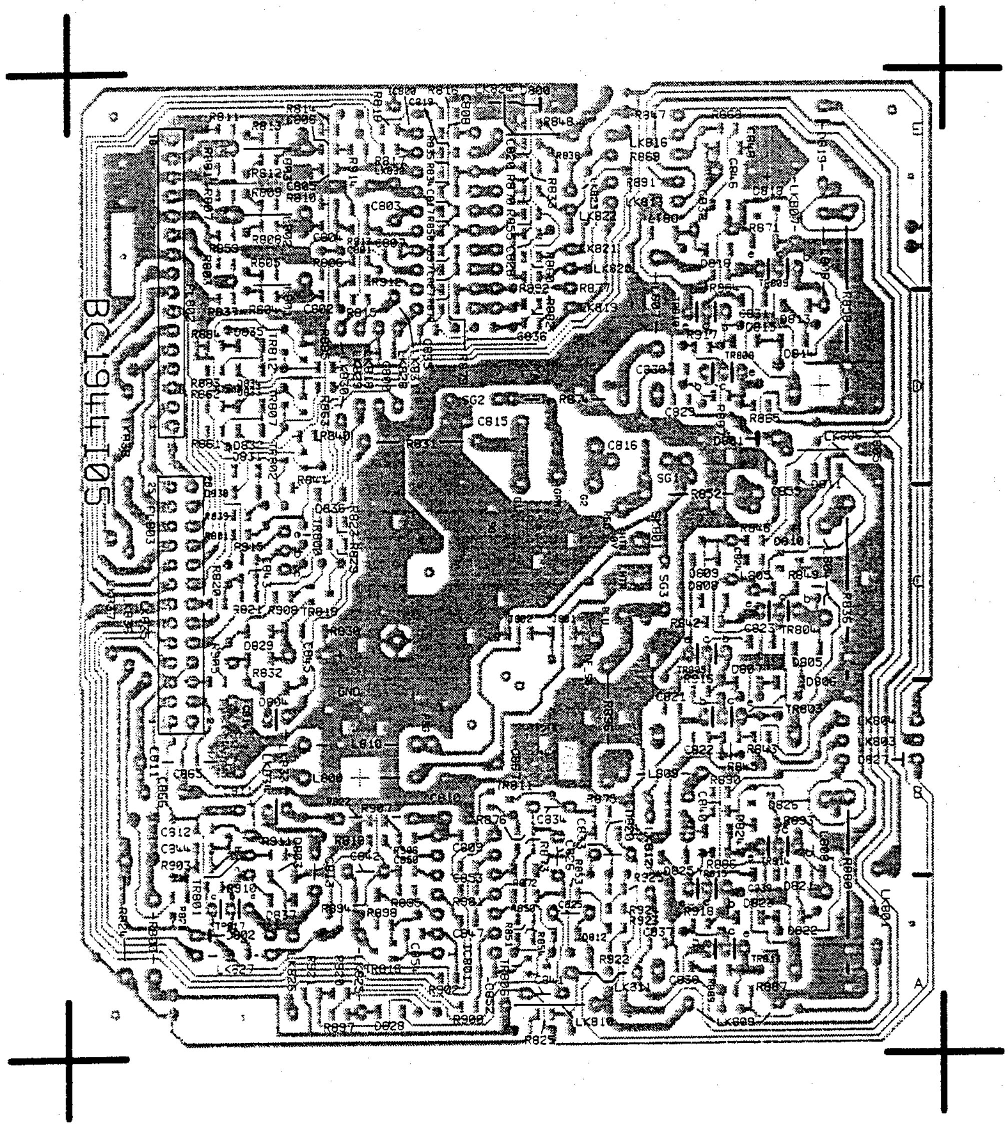
COMPONENT	DESCRIPTION	IDENT
QS0042UU0	TRANSISTOR MPSA42	TR1
QS0042UU0	TRANSISTOR MPSA42	TR2
QS0042UU0	TRANSISTOR MPSA42	TR3
QS0092UU5	TRANSISTOR MPSA92 PNP.	TR4
QS0042UU0	TRANSISTOR MPSA42	TR5
QS0092UU5	TRANSISTOR MPSA92 PNP.	TR6
QS0042UU0	TRANSISTOR MPSA42	TR7
QS0092UU5	TRANSISTOR MPSA92 PNP.	TR8
QS0042UU0	TRANSISTOR MPSA42	TR9
QS0547BP0	TRANSISTOR NPN BC547B	TR1
QS0547BP0	TRANSISTOR NPN BC547B	TR1
QS0307UU5	TRANSISTOR BC307-5	TR1

MISCELLANEOUS

COMPONENT	DESCRIPTION	IDENT
CGAG20XQ7	CAP SPARK GAP 1500V 30%	SG1
SP0017UU0	SWITCH PCB MTG HORZ	SW2
VN0014GU0	LED GREEN EL333VGT	LED
Z#0413	LOCTITE SUPERFLEX	APP

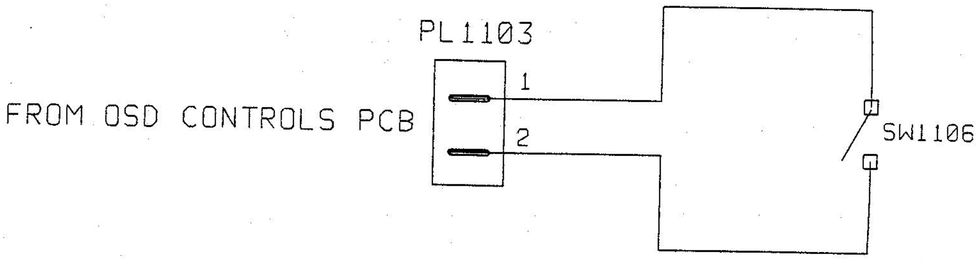
PCB LAYOUTS AND CIRCUIT DIAGRAMS

TUBEBASE PCB LAYOUT

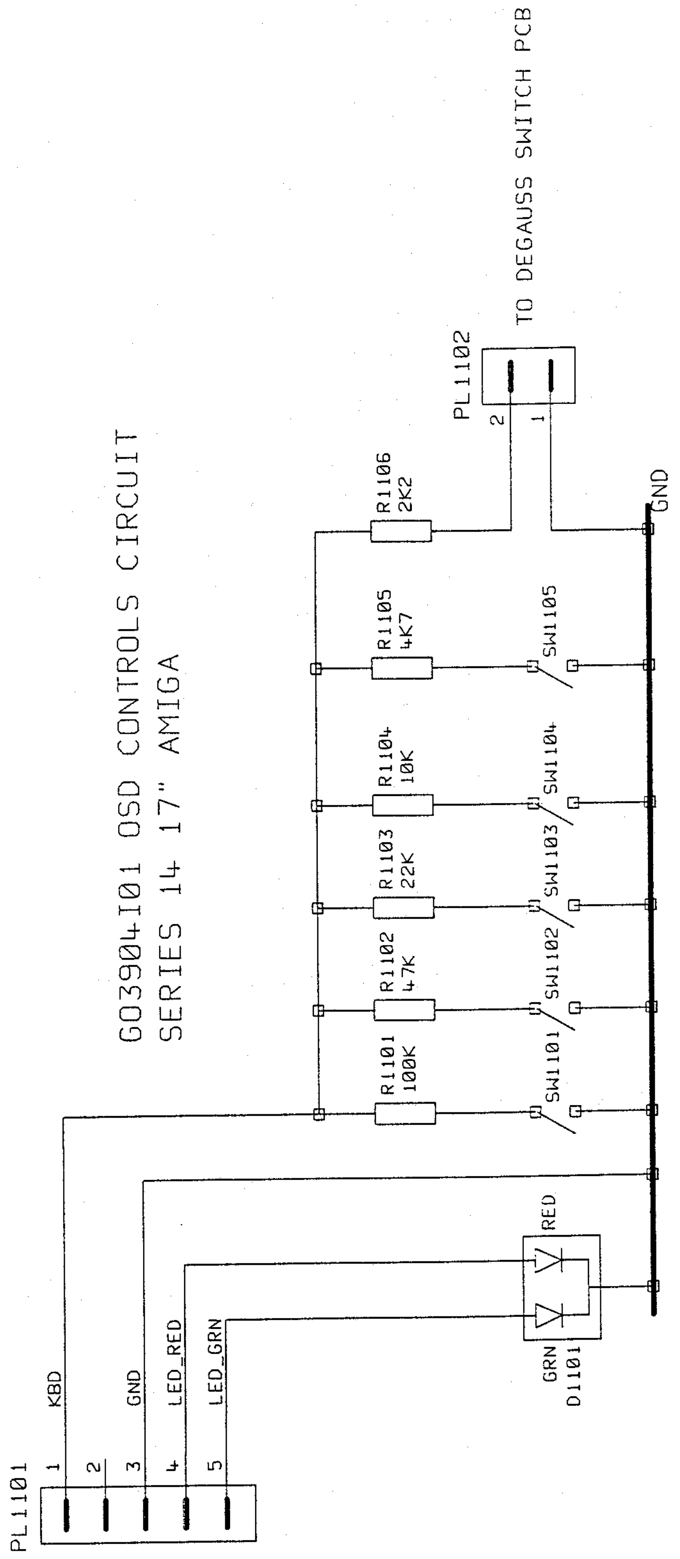

BC1944I05
SG1
SG2
SG3
GND
C815
C816
L810
L808
A

DEGAUSS SWITCH CIRCUIT DIAGRAM

G03905I01 DEGAUSS SWITCH CIRCUIT
SERIES 14 17" AMIGA

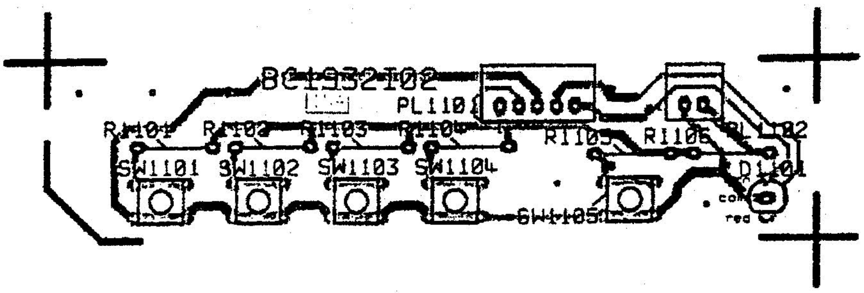

PL1103
FROM OSD CONTROLS PCB
1
2
SW1106

CONTROLS PCB CIRCUIT DIAGRAM

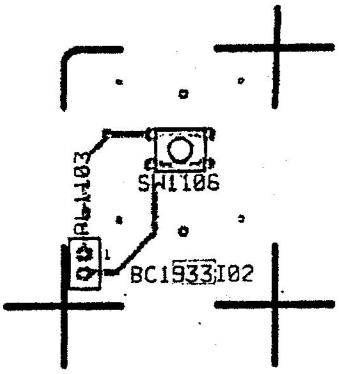

G03904I01 OSD CONTROLS CIRCUIT
SERIES 14 17" AMIGA
TO DEGAUSS SWITCH PCB
PL1102
2
1
R1106
2K2
R1105
4K7
R1104
10K
R1103
22K
R1102
47K
R1101
100K
SW1105
SW1104
SW1103
SW1102
SW1101
GND
RED
GRN
D1101
PL1101
1
2
3
4
5
KBD
GND
LED_RED
LED_GRN

CONTROLS, DEGAUSS & MAINS SWITCH PCB LAYOUTS.

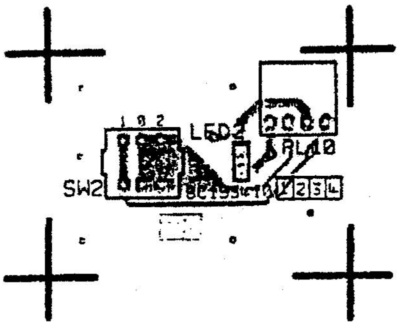
CUSTOMER CONTROLS PCB


BC1932I02
PL1101
R1101
R1102
R1103
R1104
R1105
R1106
PL1102
SW1101
SW1102
SW1103
SW1104
SW1105
D1101
com
red

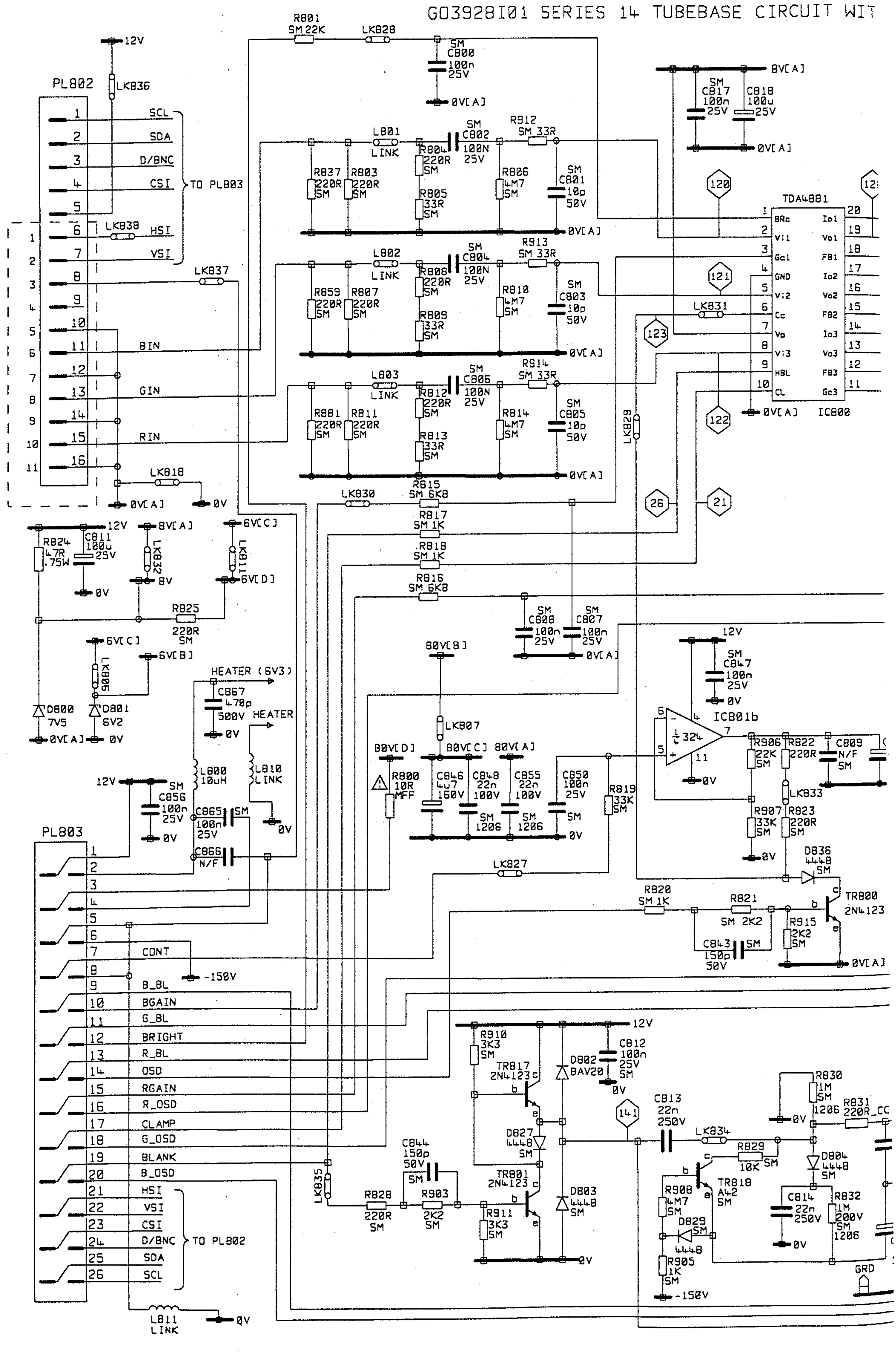
DEGAUSS SWITCH PCB


PL1103
1
SW1106
BC1933I02

MAINS SWITCH / LED PCB

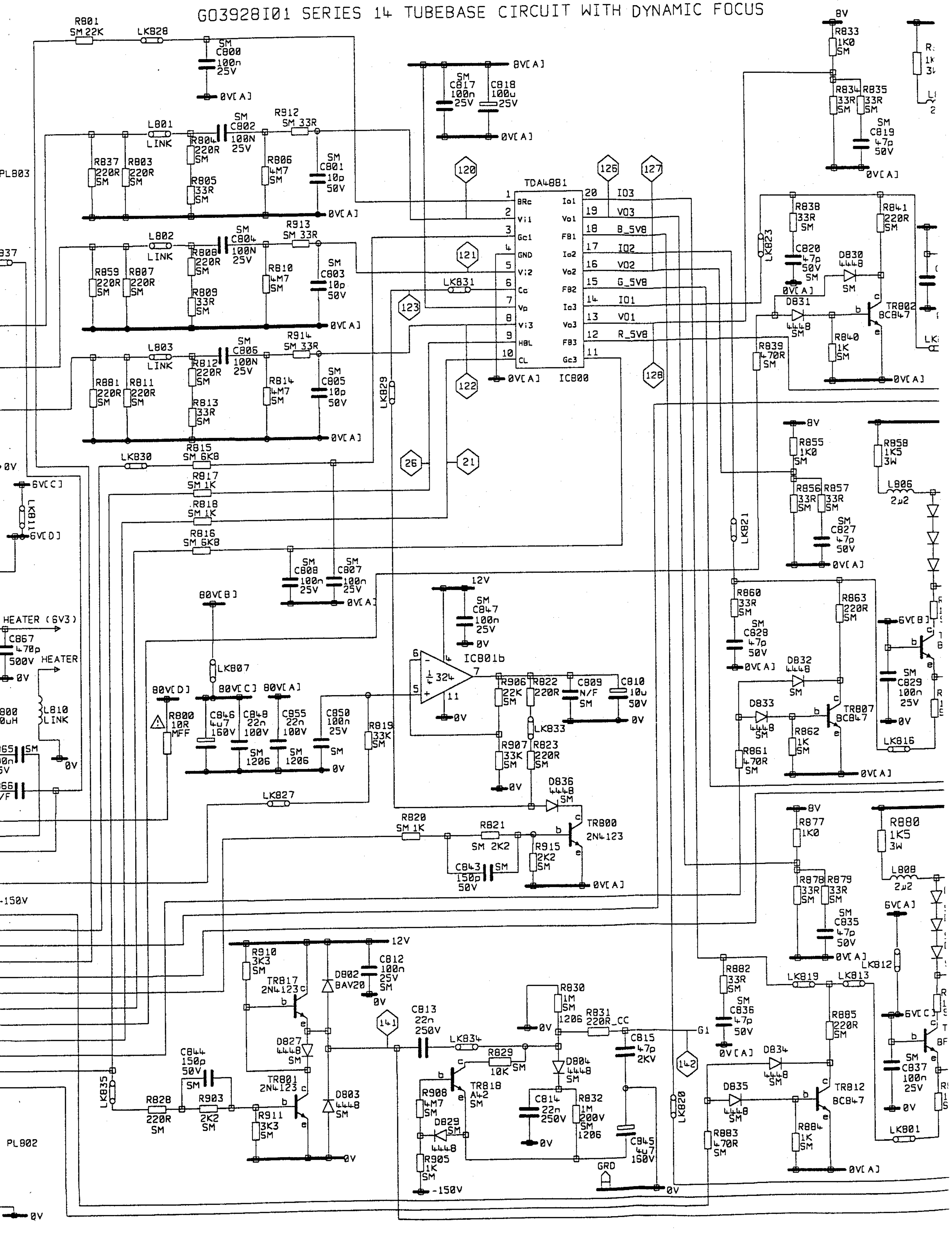

1
0
2
SW2
LED2
PL10
BC1934I0
1
2
3
4

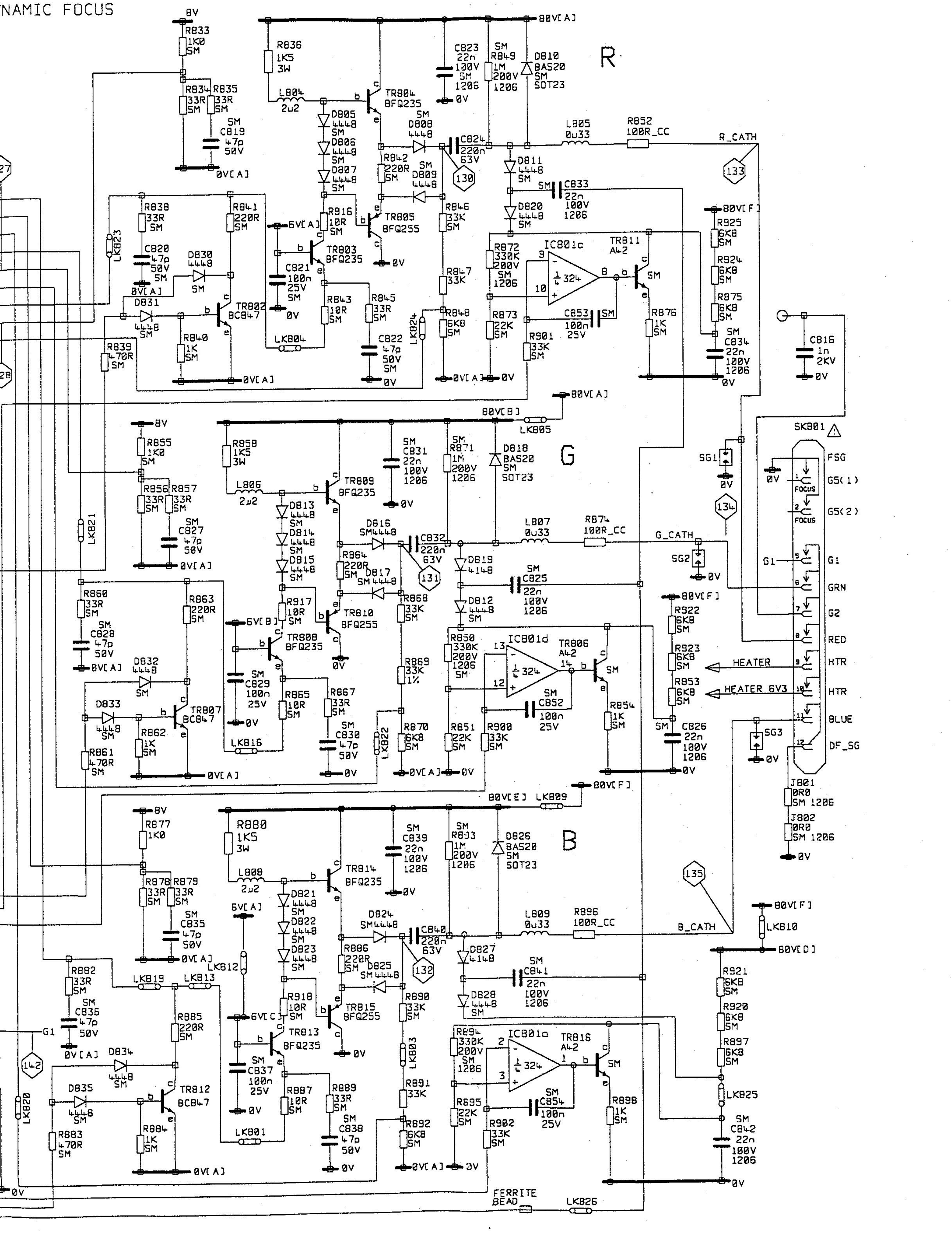
TUBE BASE PCB CIRCUIT DIAGRAM


G03928I01 SERIES 14 TUBEBASE CIRCUIT WIT
PL802
PL803
12V
LK836
SCL
SDA
D/BNC
CSI
HSI
VSI
TO PL803
TO PL802
LK838
LK837
BIN
GIN
RIN
LK818
0V[A]
0V
R801 SM 22K
LK828
SM C800 100n 25V
L801 LINK
L802 LINK
L803 LINK
SM C802 100N 25V
SM C804 100N 25V
SM C806 100N 25V
R912 SM 33R
R913 SM 33R
R914 SM 33R
R837 220R SM
R803 220R SM
R804 220R SM
R805 33R SM
R806 4M7 SM
SM C801 10p 50V
R859 220R SM
R807 220R SM
R808 220R SM
R809 33R SM
R810 4M7 SM
SM C803 10p 50V
R881 220R SM
R811 220R SM
R812 220R SM
R813 33R SM
R814 4M7 SM
SM C805 10p 50V
8V[A]
SM C817 100n 25V
C818 100u 25V
TDA4881
IC800
BRc
Vi1
Gc1
GND
Vi2
Cc
Vp
Vi3
HBL
CL
Io1
Vo1
FB1
Io2
Vo2
FB2
Io3
Vo3
FB3
Gc3
120
121
122
123
26
21
141
LK831
LK829
LK830
R815 SM 6K8
R817 SM 1K
R818 SM 1K
R816 SM 6K8
SM C808 100n 25V
SM C807 100n 25V
R824 47R .75W
C811 100u 25V
8V[A]
LK832
8V
6V[C]
LK811
6V[D]
R825 220R SM
6V[C]
LK806
6V[B]
D800 7V5
D801 6V2
HEATER (6V3)
C867 470p 500V
HEATER
L800 10uH
L810 LINK
SM C856 100n 25V
C865 100n 25V SM
C866 N/F
80V[B]
LK807
80V[D]
80V[C]
80V[A]
R800 10R MFF
C846 4u7 160V
C848 22n 100V SM 1206
C855 22n 100V SM 1206
C850 100n 25V SM
R819 33K SM
SM C847 100n 25V
IC801b
1/4 324
R906 22K SM
R822 220R
C809 N/F SM
LK833
R907 33K SM
R823 220R SM
D836 4448 SM
LK827
R820 SM 1K
R821 SM 2K2
R915 2K2 SM
C843 150p 50V SM
TR800 2N4123
-150V
CONT
B_BL
BGAIN
G_BL
BRIGHT
R_BL
OSD
RGAIN
R_OSD
CLAMP
G_OSD
BLANK
B_OSD
R910 3K3 SM
TR817 2N4123
D802 BAV20
C812 100n 25V SM
D827 4448 SM
TR801 2N4123
D803 4448 SM
C844 150p 50V SM
LK835
R828 220R SM
R903 2K2 SM
R911 3K3 SM
C813 22n 250V
LK834
R829 10K SM
TR818 A42 SM
R908 4M7 SM
D829 SM 4448
R905 1K SM
R830 1M SM 1206
R831 220R_CC
D804 4448 SM
C814 22n 250V
R832 1M 200V SM 1206
GRD
L811 LINK

UBE BASE PCB CIRCUIT DIAGRAM

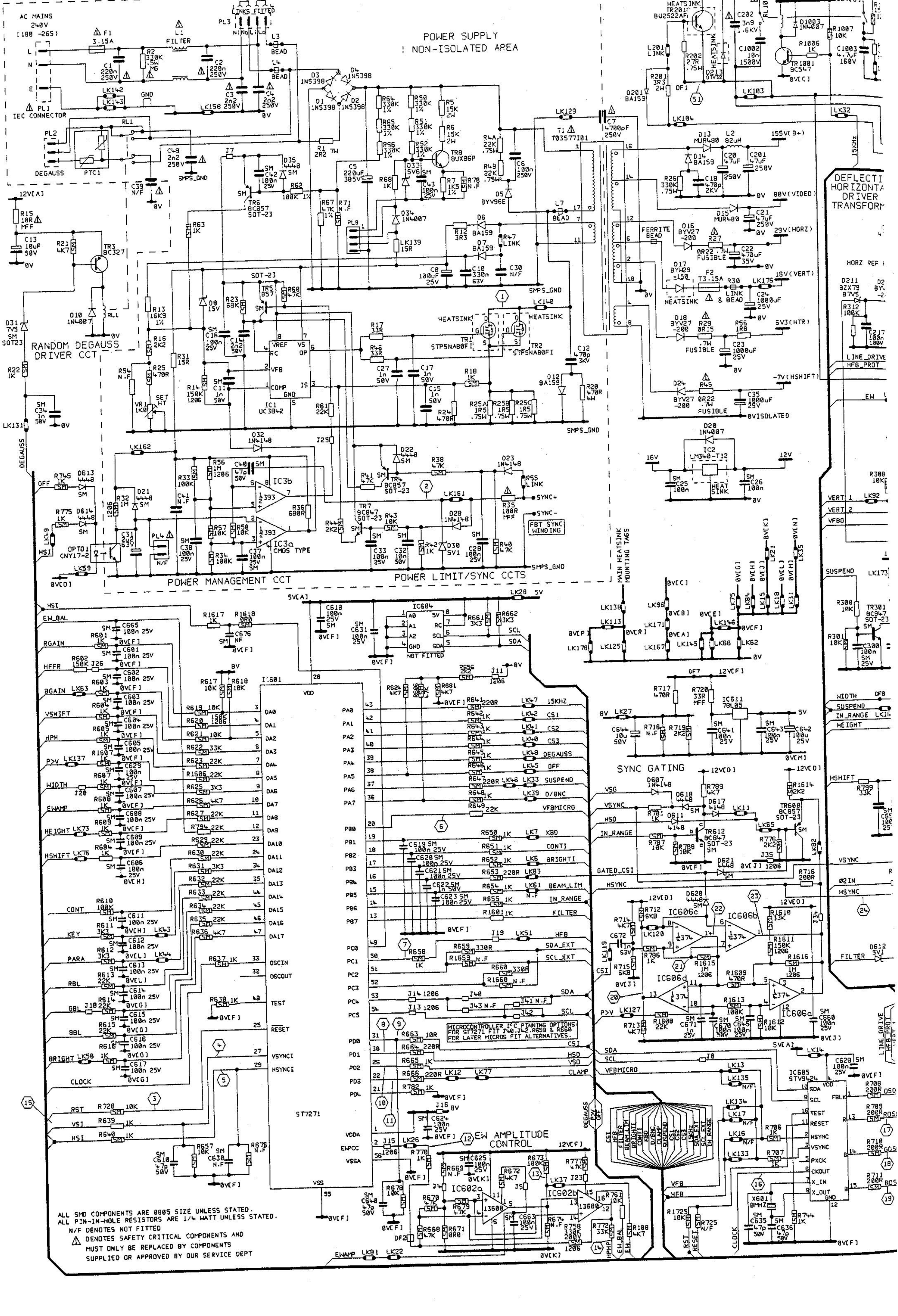
G03928I01 SERIES 14 TUBEBASE CIRCUIT WITH DYNAMIC FOCUS


R801
SM 22K
LK828
SM
C800
100n
25V
0V[A]
8V[A]
SM
C817
100n
25V
C818
100u
25V
0V[A]
8V
R833
1K0
SM
R834
33R
SM
R835
33R
SM
SM
C819
47p
50V
0V[A]
L801
LINK
SM
C802
100N
25V
R804
220R
SM
R805
33R
SM
R912
SM 33R
R806
4M7
SM
SM
C801
10p
50V
R837
220R
SM
R803
220R
SM
PL803
0V[A]
120
126
127
TDA4881
1 BRc
2 Vi1
3 Gc1
4 GND
5 Vi2
6 Cc
7 Vp
8 Vi3
9 HBL
10 CL
Io1 20 IO3
Vo1 19 VO3
FB1 18 B_5V8
Io2 17 IO2
Vo2 16 VO2
FB2 15 G_5V8
Io3 14 IO1
Vo3 13 VO1
FB3 12 R_5V8
Gc3 11
IC800
0V[A]
121
122
123
128
LK831
L802
LINK
SM
C804
100N
25V
R808
220R
SM
R809
33R
SM
R913
SM 33R
R810
4M7
SM
SM
C803
10p
50V
R859
220R
SM
R807
220R
SM
837
0V[A]
L803
LINK
SM
C806
100N
25V
R812
220R
SM
R813
33R
SM
R914
SM 33R
R814
4M7
SM
SM
C805
10p
50V
R881
220R
SM
R811
220R
SM
0V[A]
LK829
R838
33R
SM
R841
220R
SM
LK823
C820
47p
50V
SM
0V[A]
D830
4448
SM
D831
4448
SM
TR802
BC847
R840
1K
SM
R839
470R
SM
0V[A]
LK830
R815
SM 6K8
26
21
0V
6V[C]
LK811
6V[D]
R817
SM 1K
R818
SM 1K
R816
SM 6K8
SM
C808
100n
25V
SM
C807
100n
25V
0V[A]
8V
R855
1K0
SM
R858
1K5
3W
R856
33R
SM
R857
33R
SM
L806
2u2
SM
C827
47p
50V
0V[A]
LK821
R860
33R
SM
SM
C828
47p
50V
0V[A]
R863
220R
SM
6V[B]
D832
4448
SM
D833
4448
SM
TR807
BC847
R862
1K
SM
R861
470R
SM
0V[A]
SM
C829
100n
25V
0V
LK816
12V
SM
C847
100n
25V
0V
IC801b
1/4 324
6
5
4
11
7
0V
80V[B]
LK807
80V[D]
80V[C]
80V[A]
R800
10R
MFF
C846
4u7
160V
C848
22n
100V
SM
1206
C855
22n
100V
SM
1206
C850
100n
25V
SM
0V
R819
33K
SM
R906
22K
SM
R822
220R
SM
C809
N/F
SM
C810
10u
50V
0V
LK833
R907
33K
SM
R823
220R
SM
0V
D836
4448
SM
HEATER (6V3)
C867
470p
500V
0V
HEATER
800
0uH
L810
LINK
0V
65
0n
5V
SM
66
/F
LK827
R820
SM 1K
R821
SM 2K2
R915
2K2
SM
C843
150p
50V
SM
TR800
2N4123
0V[A]
-150V
8V
R877
1K0
R880
1K5
3W
R878
33R
SM
R879
33R
SM
L808
2u2
SM
C835
47p
50V
6V[A]
0V[A]
LK812
12V
R910
3K3
SM
TR817
2N4123
C812
100n
25V
SM
D802
BAV20
0V
D827
4448
SM
141
C813
22n
250V
LK834
R830
1M
SM
1206
R831
220R_CC
0V
G1
C815
47p
2KV
142
R829
10K
SM
TR818
A42
SM
D804
4448
SM
R908
4M7
SM
D829
SM
4448
C814
22n
250V
R832
1M
200V
SM
1206
C845
4u7
150V
R905
1K
SM
-150V
GRD
0V
0V
LK820
C844
150p
50V
SM
TR801
2N4123
R828
220R
SM
R903
2K2
SM
R911
3K3
SM
D803
4448
SM
0V
LK835
PL802
0V
R882
33R
SM
SM
C836
47p
50V
0V[A]
LK819
LK813
R885
220R
SM
D834
4448
SM
D835
4448
SM
TR812
BC847
R883
470R
SM
R884
1K
SM
0V[A]
6V[C]
SM
C837
100n
25V
0V
LK801

NAMIC FOCUS
R
G
B
8V
R833 1K0 SM
R834 33R SM
R835 33R SM
SM C819 47p 50V
0V[A]
80V[A]
R836 1K5 3W
L804 2u2
TR804 BFQ235
D805 4448 SM
D806 4448 SM
D807 4448 SM
C823 22n 100V SM 1206
0V
SM R849 1M 200V 1206
D810 BAS20 SM SOT23
SM D808 4448
C824 220n 63V
130
L805 0u33
R852 100R_CC
R_CATH
133
R842 220R SM
SM D809 4448
D811 4448 SM
SM C833 22n 100V 1206
D820 4448 SM
80V[F]
R925 6K8 SM
R924 6K8 SM
R875 6K8 SM
SM C834 22n 100V 1206
0V
R838 33R SM
R841 220R SM
R916 10R SM
TR805 BFQ255
R846 33K SM
6V[A]
TR803 BFQ235
C820 47p 50V SM
D830 4448 SM
0V[A]
LK823
C821 100n 25V SM
R872 330K 200V SM 1206
IC801c
9
1/4 324
8
10
TR811 A42
SM
R847 33K
D831 4448 SM
TR802 BC847
R840 1K SM
R843 10R SM
R845 33R SM
LK824
R848 6K8 SM
R873 22K SM
C853 100n 25V
SM
R901 33K SM
R876 1K SM
C816 1n 2KV
R839 470R SM
LK804
C822 47p 50V SM
0V[A]
0V
80V[B]
LK805
R858 1K5 3W
R855 1K0 SM
SM C831 22n 100V 1206
SM R871 1M 200V 1206
D818 BAS20 SM SOT23
TR809 BFQ235
L806 2u2
D813 4448 SM
D814 4448 SM
D815 4448 SM
R856 33R SM
R857 33R SM
SM C827 47p 50V
LK821
D816 SM4448
C832 220n 63V
131
D819 4148
L807 0u33
R874 100R_CC
G_CATH
134
SK801
FSG
G5(1)
G5(2)
FOCUS
G1
GRN
G2
RED
HTR
BLUE
DF_SG
1
2
5
6
7
8
9
10
11
12
SG1
SG2
SG3
R864 220R SM
D817 SM 4448
R868 33K SM
TR810 BFQ255
SM C825 22n 100V 1206
D812 4448 SM
R860 33R SM
R863 220R SM
R917 10R SM
6V[B]
TR808 BFQ235
SM C828 47p 50V
R850 330K 200V 1206 SM
IC801d
13
1/4 324
14
12
TR806 A42
SM
R922 6K8 SM
R923 6K8 SM
HEATER
HEATER 6V3
R853 6K8 SM
D832 4448 SM
TR807 BC847
D833 4448 SM
R862 1K SM
SM C829 100n 25V
R865 10R SM
R867 33R SM
R869 33K 1%
LK822
R870 6K8 SM
R851 22K SM
R900 33K SM
SM C852 100n 25V
R854 1K SM
SM C826 22n 100V 1206
R861 470R SM
LK816
SM C830 47p 50V
J801 0R0 SM 1206
J802 0R0 SM 1206
80V[E]
LK809
80V[F]
R877 1K0
R880 1K5 3W
SM C839 22n 100V 1206
SM R893 1M 200V 1206
D826 BAS20 SM SOT23
L808 2u2
TR814 BFQ235
135
R878 33R SM
R879 33R SM
SM C835 47p 50V
D821 4448 SM
D822 4448 SM
D823 4448 SM
6V[A]
D824 SM4448
C840 220n 63V
132
L809 0u33
R896 100R_CC
B_CATH
LK810
80V[D]
D827 4148
R886 220R SM
D825 SM 4448
SM C841 22n 100V 1206
R882 33R SM
LK819
LK813
LK812
SM C836 47p 50V
R885 220R SM
R918 10R SM
6V[C]
TR815 BFQ255
R890 33K SM
D828 4448 SM
R921 6K8 SM
R920 6K8 SM
R897 6K8 SM
TR813 BFQ235
R894 330K 200V SM 1206
IC801a
2
1/4 324
1
3
TR816 A42
SM
142
D834 4448 SM
D835 4448 SM
TR812 BC847
SM C837 100n 25V
LK803
R887 10R SM
R889 33R SM
R891 33K
R895 22K SM
SM C854 100n 25V
R902 33K SM
R898 1K SM
LK825
SM C842 22n 100V 1206
LK820
R883 470R SM
R884 1K SM
LK801
SM C838 47p 50V
R892 6K8 SM
FERRITE BEAD
LK826

MAIN PCB CIRCUIT DIAGRAM

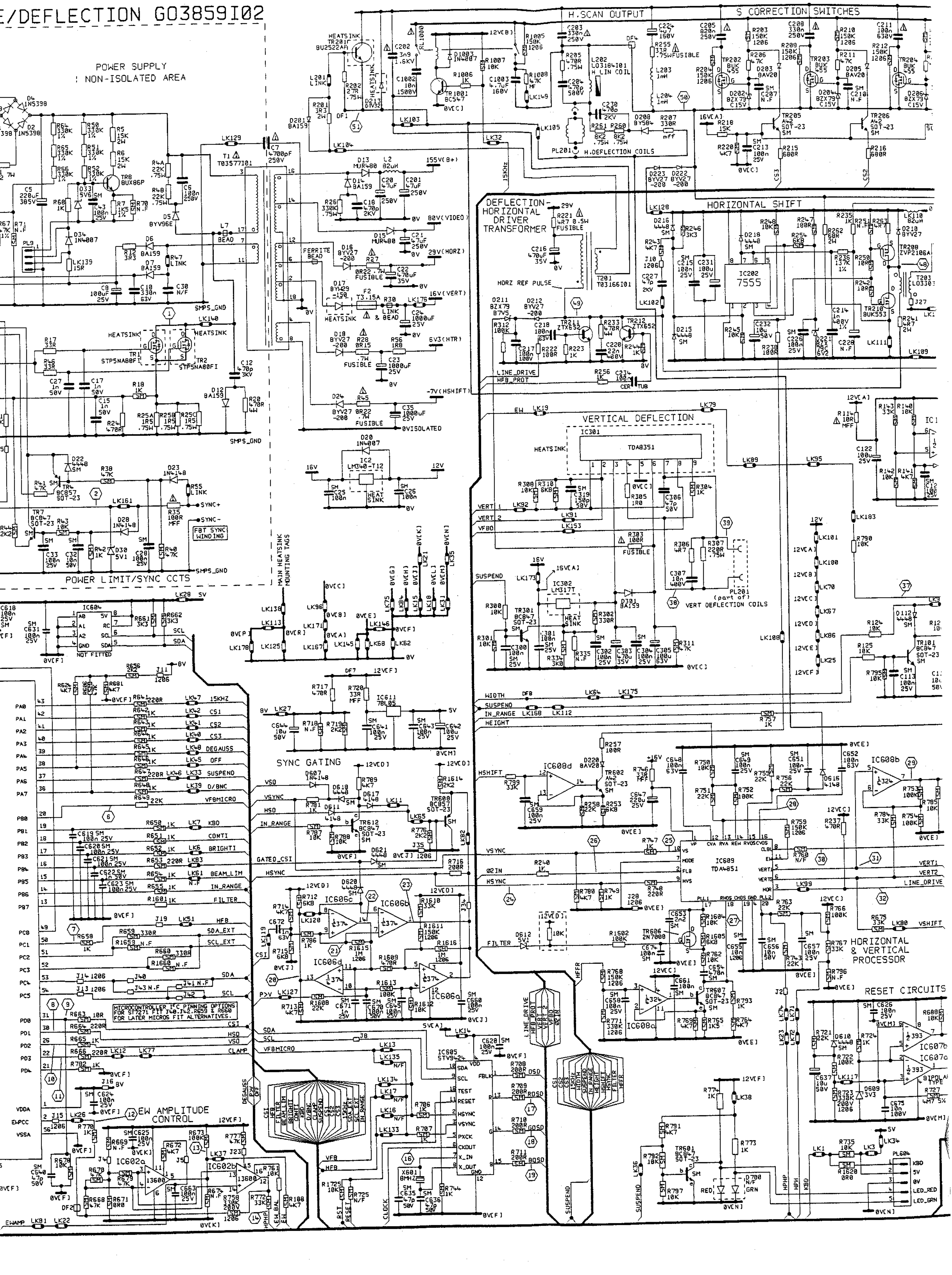
SERIES 14 AMIGA 17" DRIVE/DEFLECTION G03859I02

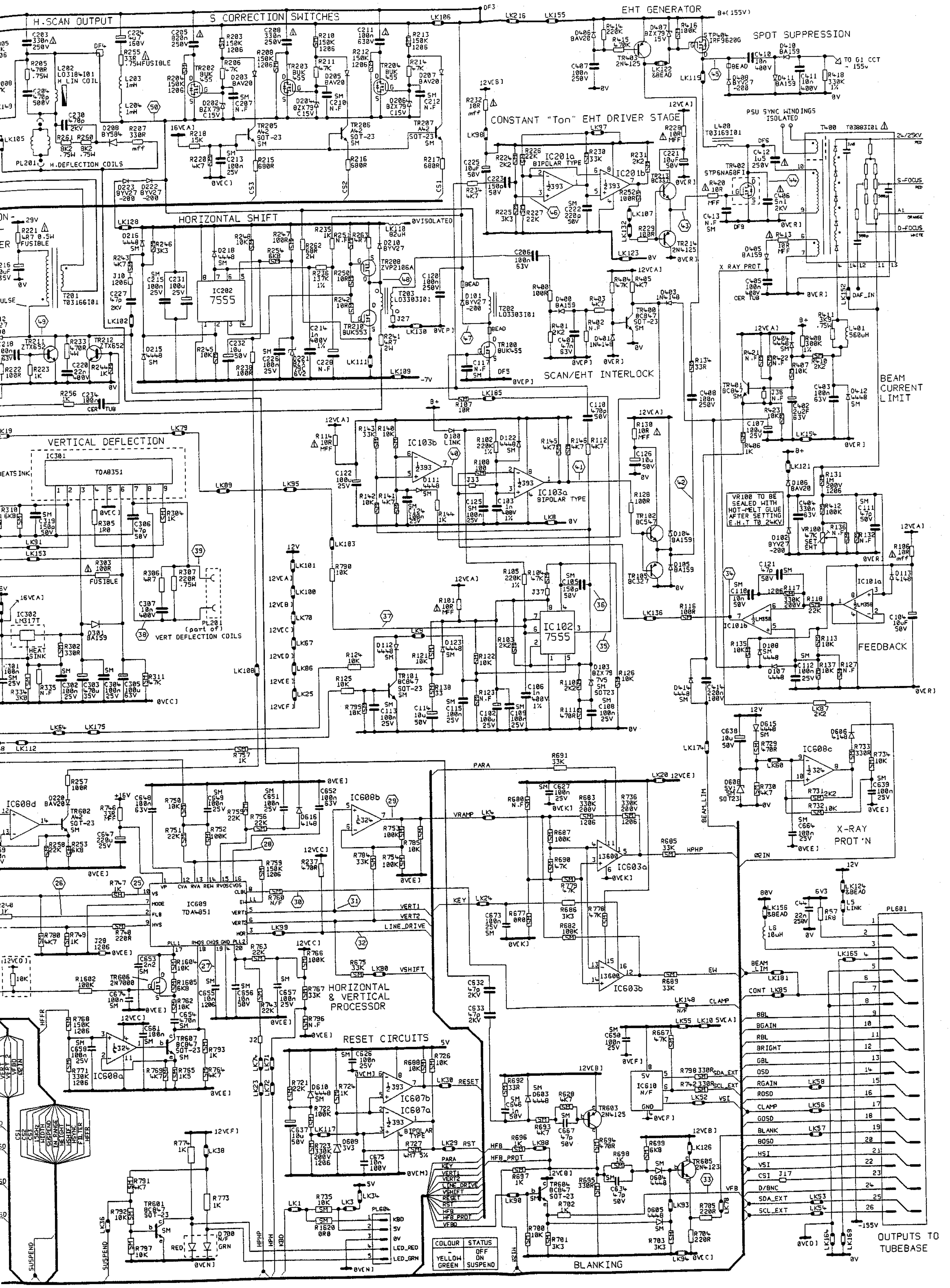

AC MAINS
240V
(180 -265)
IEC CONNECTOR
DEGAUSS
PTC1
POWER SUPPLY
NON-ISOLATED AREA
LINKS FITTED
HEATSINK
TR201 BU2522AF
RANDOM DEGAUSS DRIVER CCT
IC1 UC3842
TR1 STP5NA80FI
TR2 STP5NA80FI
T1 T03577I01
IC3b
IC3a CMOS TYPE
IC2 LM340-T12
OPTO1 CNY17-2
FBT SYNC WINDING
POWER MANAGEMENT CCT
POWER LIMIT/SYNC CCTS
MAIN HEATSINK MOUNTING TAGS
DEFLECTI
HORIZONTA
DRIVER
TRANSFORM
IC604
NOT FITTED
IC601
ST7271
IC611 78L05
SYNC GATING
IC606a
IC606b
IC606c
IC606d
IC605 STV9424
IC602a
IC602b
EW AMPLITUDE CONTROL
MICROCONTROLLER I²C PINNING OPTIONS FOR ST7271 FIT J40,J42,R659 & R660 FOR LATER MICROS FIT ALTERNATIVES.
155V(B+)
80V(VIDEO)
29V(HORZ)
16V(VERT)
6V3(HTR)
-7V(HSHIFT)
0VISOLATED
SMPS_GND

ALL SMD COMPONENTS ARE 0805 SIZE UNLESS STATED.
ALL PIN-IN-HOLE RESISTORS ARE 1/4 WATT UNLESS STATED.
N/F DENOTES NOT FITTED
⚠ DENOTES SAFETY CRITICAL COMPONENTS AND
MUST ONLY BE REPLACED BY COMPONENTS
SUPPLIED OR APPROVED BY OUR SERVICE DEPT

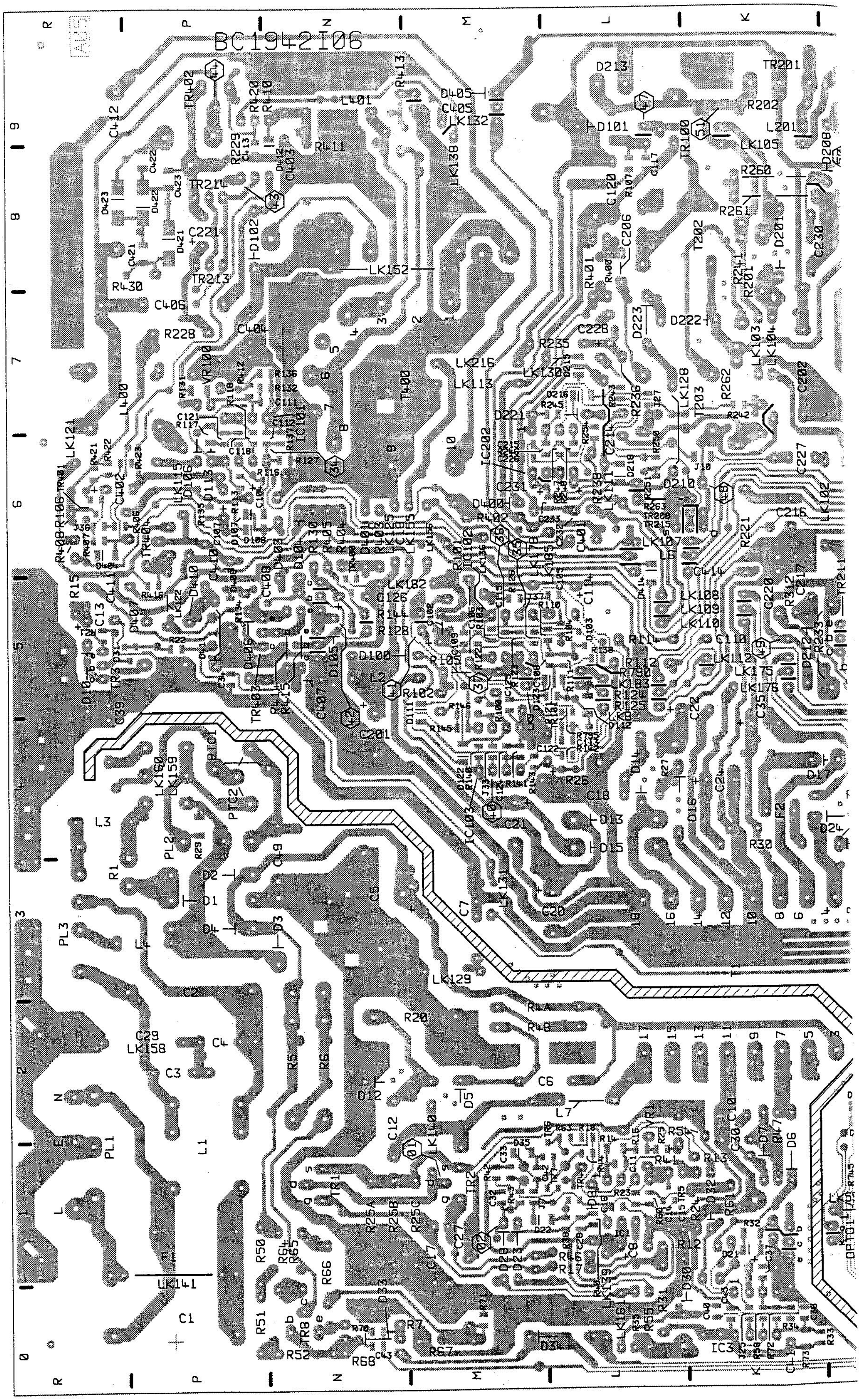
CUIT DIAGRAM

E/DEFLECTION G03859I02

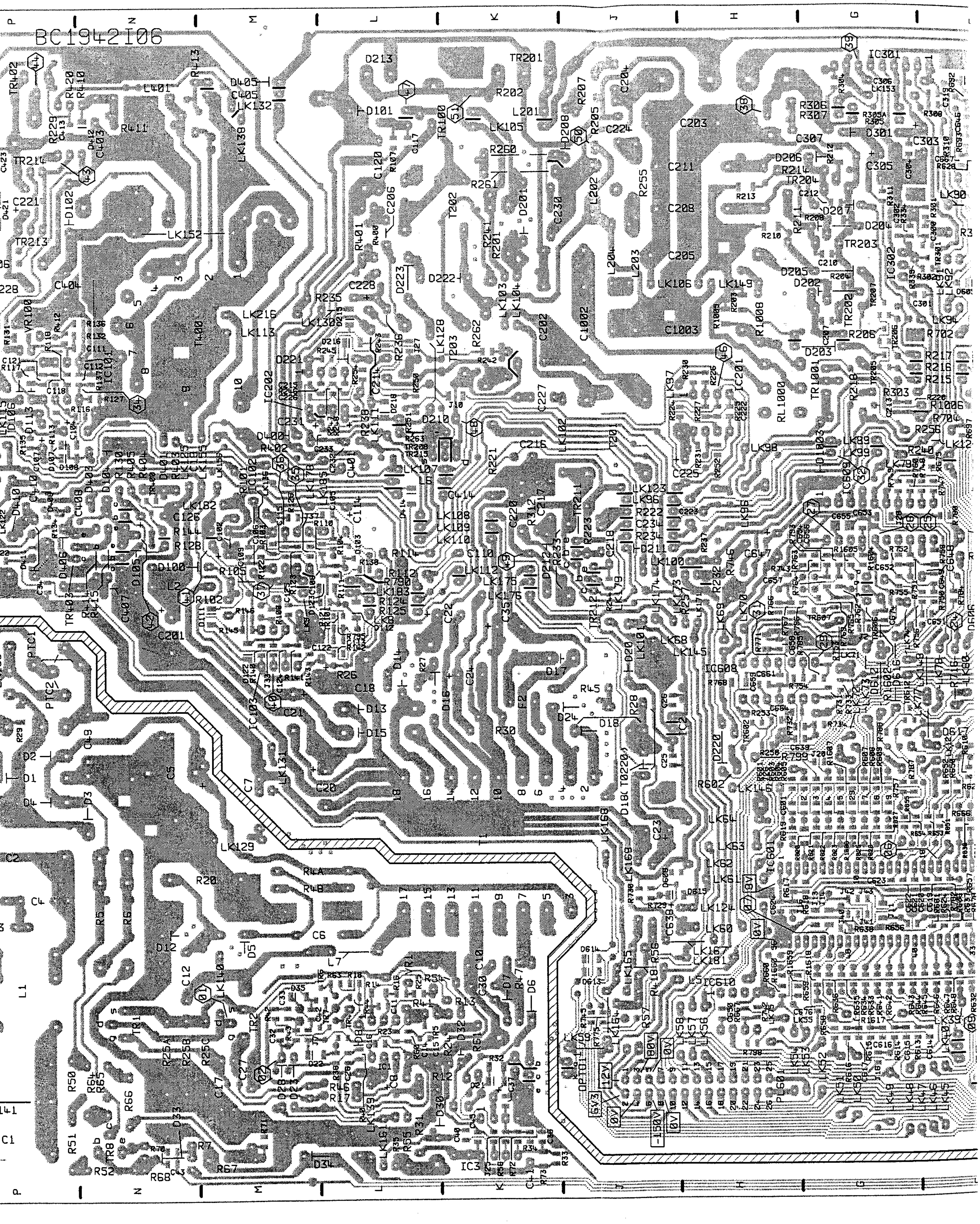

POWER SUPPLY
: NON-ISOLATED AREA
POWER LIMIT/SYNC CCTS
MAIN HEATSINK MOUNTING TAGS
H.SCAN OUTPUT
S CORRECTION SWITCHES
H.DEFLECTION COILS
DEFLECTION-HORIZONTAL DRIVER TRANSFORMER
HORIZONTAL SHIFT
VERTICAL DEFLECTION
VERT DEFLECTION COILS
SYNC GATING
HORIZONTAL & VERTICAL PROCESSOR
RESET CIRCUITS
EW AMPLITUDE CONTROL
MICROCONTROLLER I²C PINNING OPTIONS FOR ST7271 FIT J40,J42,R659 & R660 FOR LATER MICROS FIT ALTERNATIVES.
TDA8351
TDA4851
7555
LM317T
LM340-T12
STV9424
NOT FITTED
155V(B+)
82V(VIDEO)
29V(HORZ)
16V(VERT)
6V3(HTR)
-7V(HSHIFT)
0VISOLATED
SMPS_GND
FBT SYNC WINDING
HEATSINK


H.SCAN OUTPUT
S CORRECTION SWITCHES
EHT GENERATOR
B+(155V)
SPOT SUPPRESSION
TO G1 CCT -155V
CONSTANT "Ton" EHT DRIVER STAGE
PSU SYNC WINDINGS ISOLATED
T400 T03883I01
2k/25KV
S-FOCUS
A1
D-FOCUS
X RAY PROT
DAF_IN
HORIZONTAL SHIFT
0VISOLATED
H.DEFLECTION COILS
SCAN/EHT INTERLOCK
BEAM CURRENT LIMIT
VERTICAL DEFLECTION
TDA8351
VERT DEFLECTION COILS
HEAT SINK
VR100 TO BE SEALED WITH HOT-MELT GLUE AFTER SETTING E.H.T TO 24KV
FEEDBACK
X-RAY PROT'N
HORIZONTAL & VERTICAL PROCESSOR
TDA4851
RESET CIRCUITS
BLANKING
OUTPUTS TO TUBEBASE
PL601
PL604
COLOUR STATUS
- OFF
YELLOW ON
GREEN SUSPEND
SUSPEND
IN RANGE
HFFR

DRIVE DEFLECTION PCB LAYOU


BC1942I06
R
P
N
M
L
K
9
8
7
6
5
4
3
2
1
0
TR402
R420
R410
L401
R413
D405
C405
LK132
D213
TR201
R202
L201
LK105
D208
D101
TR100
C412
R229
C413
D412
C403
R411
LK138
C422
C423
TR214
D423
D422
D421
C421
C221
D102
C120
R107
C117
R260
R261
D201
C230
T202
C206
R401
R400
LK152
R430
TR213
C406
R241
R201
R228
C404
T400
D223
D222
C228
R235
LK103
LK104
LK130
LK216
LK113
LK128
T203
R262
C202
VR100
R131
R118
R412
R136
R132
C111
IC101
C121
R117
C112
C118
R116
R127
L400
LK121
R421
R422
R423
D221
IC202
D216
R245
R243
R236
C214
R250
R242
C227
R254
D218
D210
J10
LK102
R406
R106
R407
C402
D106
LK115
D113
R135
R113
C104
R408
TR404
C401
R404
R405
R130
D403
D404
D400
R402
C231
C233
R239
LK111
R263
TR208
R221
C216
LK107
L6
C414
C410
C408
D408
R134
D410
R416
LK122
C411
R15
C13
D407
R22
LK182
C126
R144
R128
R101
D102
LK136
C106
C115
R126
R110
C114
D14
LK108
LK109
LK110
C220
R312
C217
TR211
R114
C110
LK112
LK175
LK176
D100
D105
R105
D406
TR403
R414
R415
C407
L2
R102
R146
R145
R123
R111
R112
R790
LK183
C20
C35
D10
TR3
C39
C201
C122
R26
C18
D11
R27
C24
D17
LK160
LK159
PTC1
PTC2
L3
PL2
R29
C49
IC103
C21
D13
D15
D16
F2
D2
R30
R1
D2
D1
D4
D3
C5
C7
LK131
C20
18
16
14
12
10
8
6
4
PL3
LK129
C2
R4A
R4B
R20
C29
LK158
C4
C3
R5
R6
17
15
13
11
9
7
5
3
C6
D12
D5
L7
C12
LK140
R63
R18
R1
R16
R29
R54
C30
C10
D7
R47
D6
PL1
L1
TR1
TR2
C33
D35
TR5
C11
R41
R13
C32
C27
R25A
R25B
R25C
IC1
D32
R24
R61
R32
D22
D28
D23
R12
R50
R64
R65
R66
C17
C8
D30
D21
C37
OPTO1
F1
LK141
C1
D33
R11
LK139
R31
LK161
R35
R55
IC3
R34
R33
R51
TR8
R52
R70
R7
R68
C43
R67
D34
R72

VE DEFLECTION PCB LAYOUT


P
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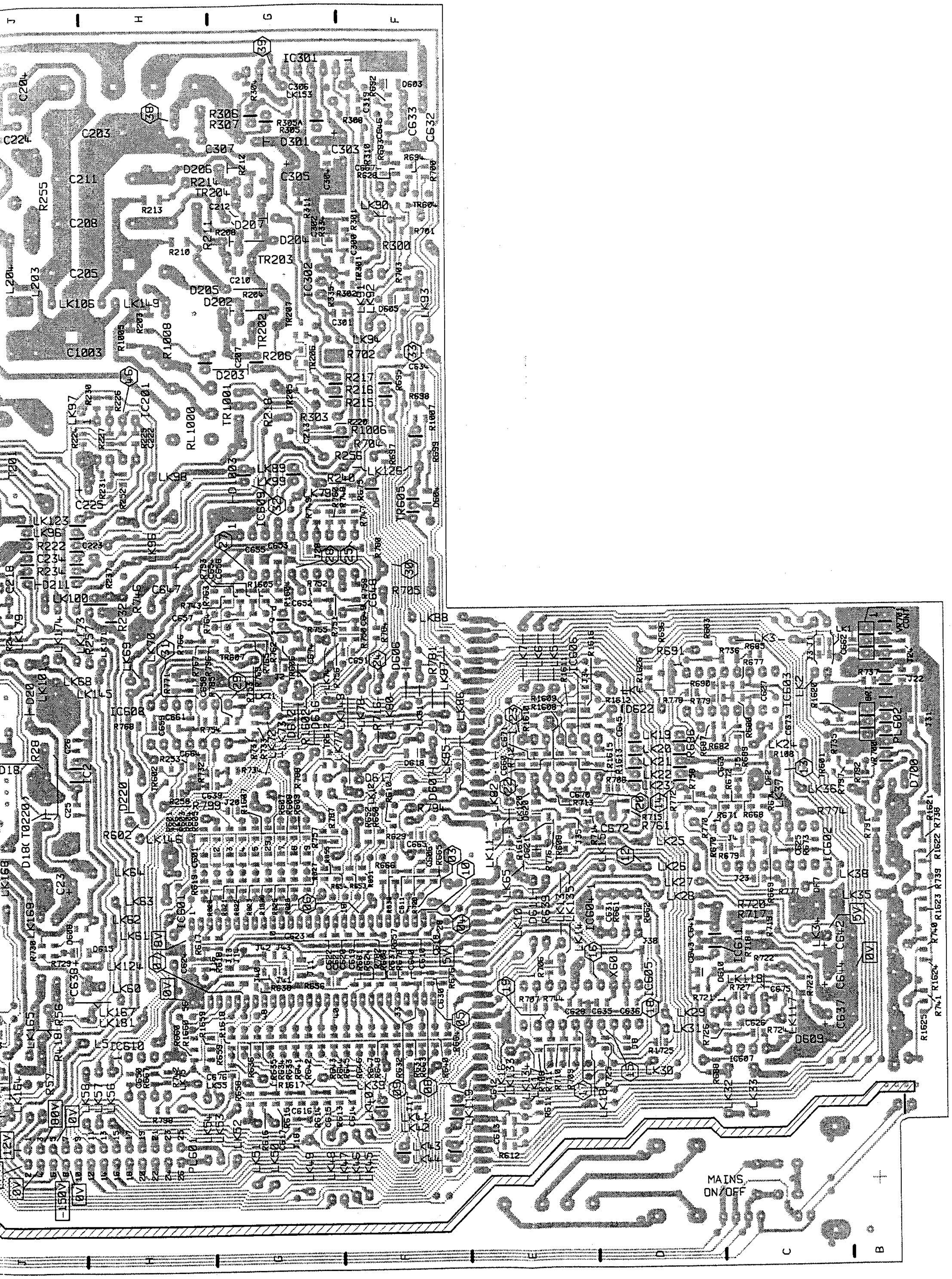
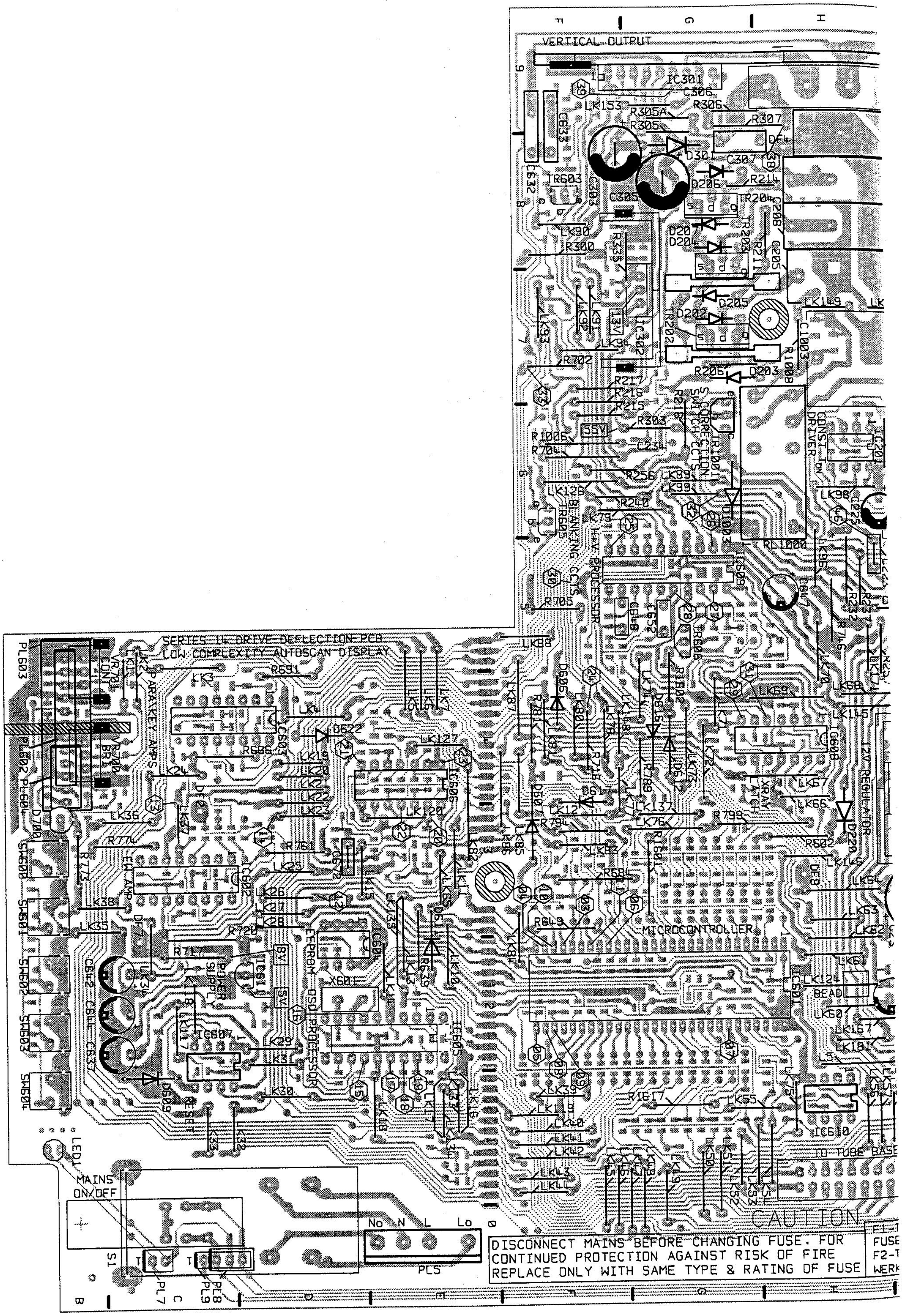
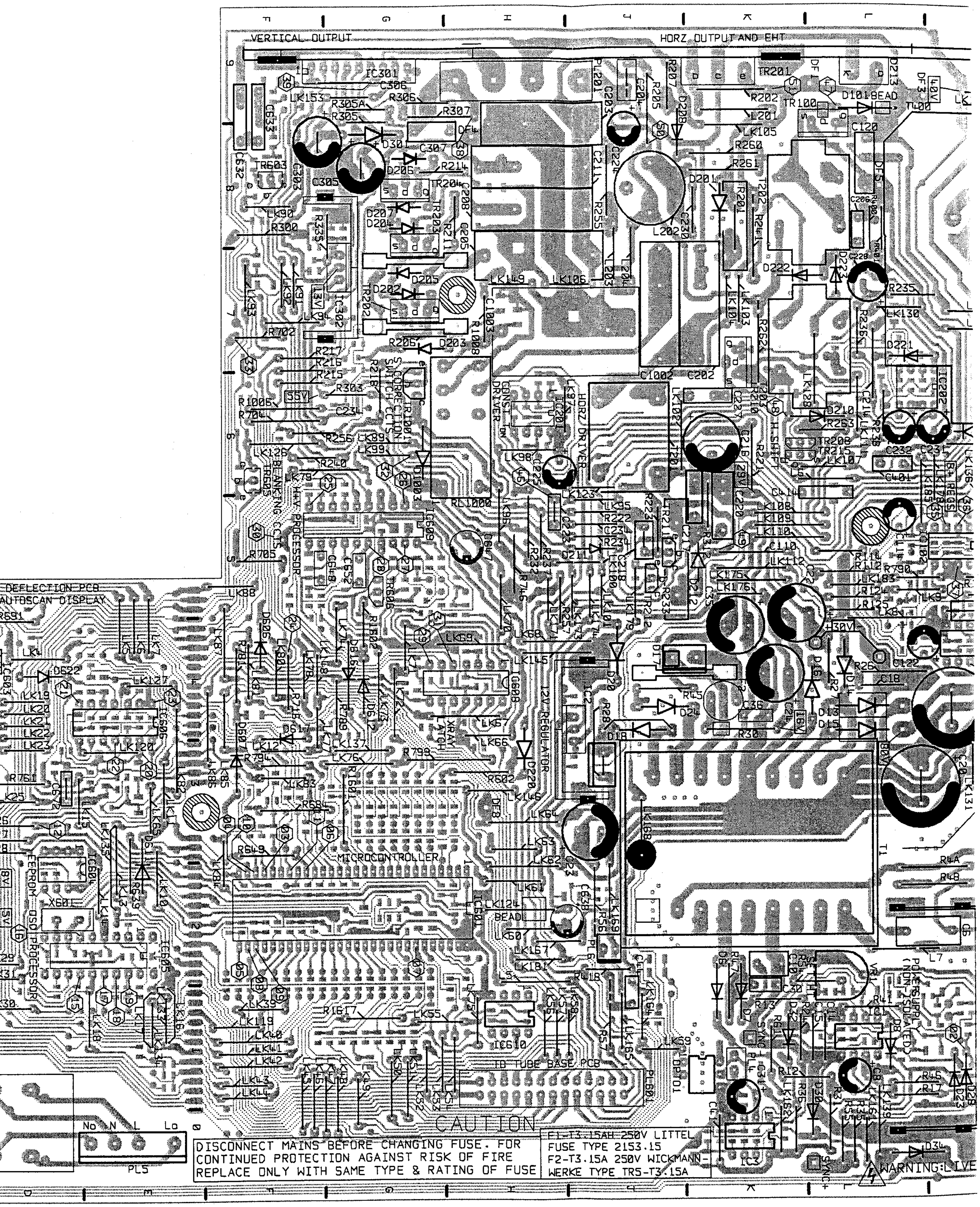
M
L
K
J
H
G
BC1942I06
TR402
R420
R410
L401
R413
D405
C405
LK132
LK138
R411
R229
TR214
D102
C221
TR213
LK152
C404
VR100
T400
LK216
LK113
IC101
IC202
D221
R235
LK130
D213
TR201
D101
TR100
R202
L201
LK105
R207
R205
D208
C204
C224
C203
R306
R307
IC301
D301
C303
C307
C305
D206
R214
TR204
C211
R255
C208
C205
C230
L202
T202
R261
R260
D201
D207
D204
TR203
IC302
D205
D202
LK106
LK149
L204
L203
C1002
C1003
R1008
TR202
R206
D203
R702
R217
R216
R215
R303
R1006
TR1001
RL1000
IC201
C202
R262
T203
LK128
LK103
LK104
C227
LK102
C216
R221
D210
LK111
D400
R402
C231
LK107
LK123
LK96
R222
C234
R234
D211
LK100
C225
LK98
LK89
LK99
IC609
C647
C220
R312
C217
TR211
R223
C218
LK108
LK109
LK110
C110
LK112
LK175
LK176
C35
C22
C114
R114
R112
R790
LK183
LK182
C126
R128
D100
L2
R102
R105
C407
C201
TR103
R415
LK68
LK145
IC608
D14
C18
R26
D13
D15
D16
C24
R27
F2
D17
R45
D24
D18
R28
R30
D220
R602
LK147
C21
IC103
LK131
C7
C20
PTC1
PTC2
C9
C5
D2
D1
D4
D3
C2
C4
R5
R6
LK129
R4A
R4B
R20
C6
D12
D5
L7
C10
R1
R47
D7
D6
C12
LK140
L1
TR1
TR2
R25A
R25B
R25C
C27
C17
R13
R41
R12
R32
R61
R50
R64
R65
R66
R51
TR8
R52
R68
R70
R7
R67
D34
IC3
IC1
LK139
LK161
D30
R31
R55
D33
LK168
LK169
D18K
T0220
C23
LK64
LK63
LK62
LK61
LK124
LK60
IC601
LK167
LK181
IC610
LK165
LK164
R56
R57
OPT01
OV
6V3
12V
8V
80V
-150V
PL60
LK58
LK57
LK56
LK55
LK54
LK53
LK52
LK51
LK50
LK49
LK48
LK47
LK46
LK45

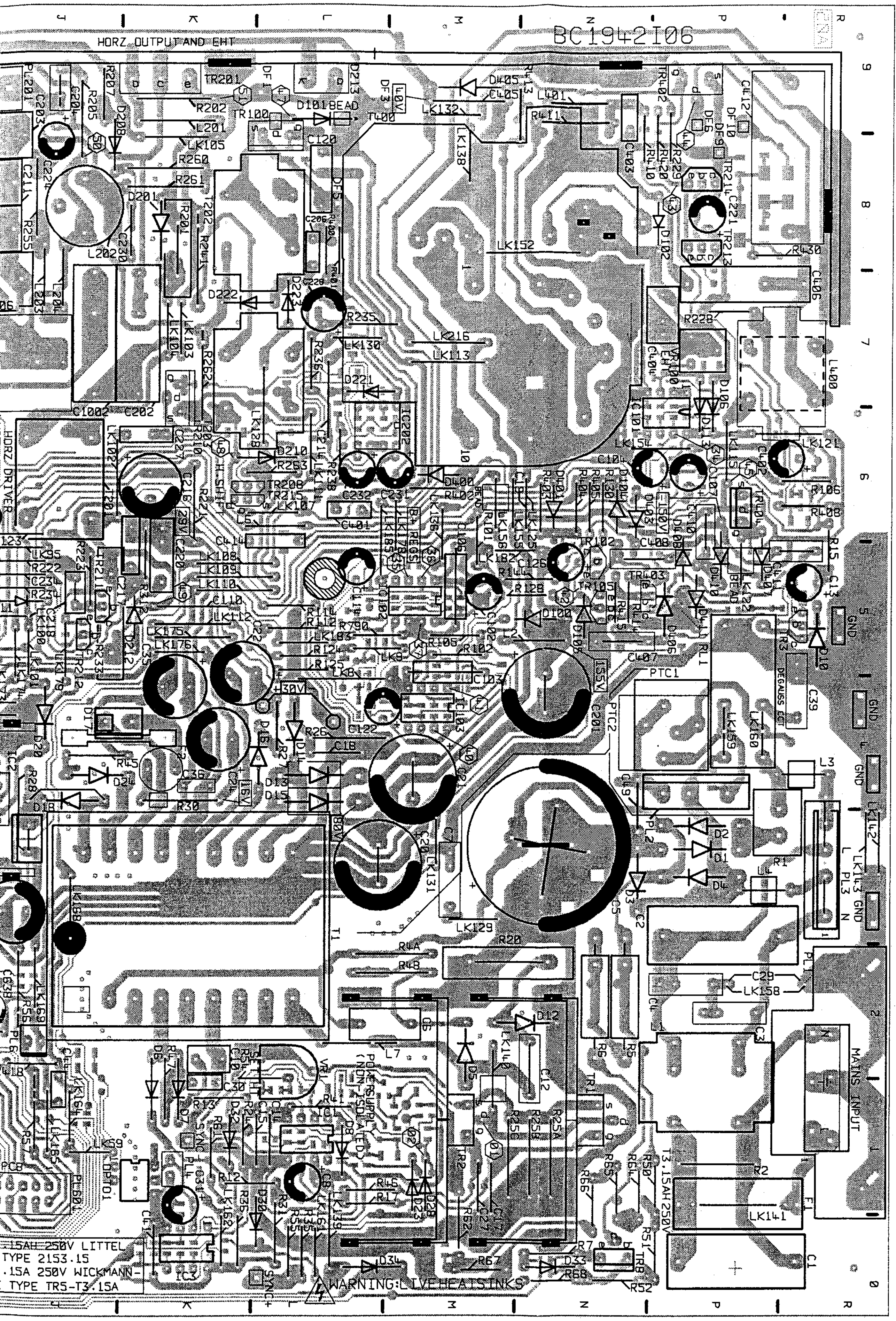

J
H
G
F
E
D
C
B
IC301
IC302
IC201
IC601
IC602
IC603
IC604
IC605
IC606
IC607
IC608
IC609
IC610
IC611
TR201
TR202
TR203
TR204
TR205
TR206
TR603
TR604
TR1001
RL1000
D203
D205
D206
D207
D208
D301
D603
D606
D607
D609
D622
D700
C201
C203
C205
C208
C211
C224
C303
C305
C307
C632
C633
C637
C642
C644
C672
C1003
R255
R300
R306
R307
R602
R691
R702
R705
R1008
LK25
LK26
LK27
LK28
LK29
LK30
LK36
LK37
LK38
LK55
X601
PL601
PL602
MAINS
ON/OFF
12V
0V
80V
-150V
5V

DRIVE DEFLECTION PCB LAYOUT


VERTICAL OUTPUT
IC301
SERIES 14 DRIVE DEFLECTION PCB
LOW COMPLEXITY AUTOSCAN DISPLAY
PARA KEY AMPS
EW AMP
POWER SUPPLY
EEPROM
OSD PROCESSOR
H+V PROCESSOR
BLANKING CCTS
S CORRECTION SWITCH CCTS
CONST. DRIVER
12V REGULATOR
XRAY LATCH
MICROCONTROLLER
TO TUBE BASE
MAINS ON/OFF
S1
PL5
PL7
PL8
PL9
PL602
PL603
LED1
SW600
SW601
SW602
SW603
SW604
IC601
IC605
IC606
IC607
IC608
IC609
IC610
IC611
IC302
RL1000
X601
BEAD
CAUTION
DISCONNECT MAINS BEFORE CHANGING FUSE. FOR CONTINUED PROTECTION AGAINST RISK OF FIRE REPLACE ONLY WITH SAME TYPE & RATING OF FUSE
No
N
L
Lo
B
C
D
E
F
G
H

LECTION PCB LAYOUT


VERTICAL OUTPUT
HORZ OUTPUT AND EHT
S CORRECTION SWITCH CCTS
CONST I DRIVER
HORZ DRIVER
H.V. PROCESSOR
BLANKING CCTS
H. SHIFT
DEFLECTION PCB
AUTOSCAN DISPLAY
XRAY LATCH
12V REGULATOR
MICROCONTROLLER
EEPROM
OSD PROCESSOR
TO TUBE BASE PCB
POWER SUPPLY (NON-ISOLATED)
No N L Lo
PL5
CAUTION
DISCONNECT MAINS BEFORE CHANGING FUSE. FOR CONTINUED PROTECTION AGAINST RISK OF FIRE REPLACE ONLY WITH SAME TYPE & RATING OF FUSE
F1-T3.15AH 250V LITTEL FUSE TYPE 2153.15
F2-T3.15A 250V WICKMANN-WERKE TYPE TR5-T3.15A
WARNING:LIVE


BC1942I06
HORZ OUTPUT AND EHT
HORZ DRIVER
POWERSUPPLY (NON-ISOLATED)
WARNING: LIVE HEATSINKS
MAINS INPUT
DEGAUSS COIL
T3.15AH 250V
.15AH 250V LITTEL
TYPE 2153.15
.15A 250V WICKMANN
TYPE TRS-T3.15A
GND
PTC1
PTC2
T1
T400
TR201
TR100
D101 BEAD
L400
C201
C39
F1
LK141
C1
IC3
PL3
PL1
PL2
40V
30V
135V
150V
80V
16V
29V
H.SHIFT
B+ REGS
J
K
L
M
N
P
R
0
1
2
3
4
5
6
7
8
9